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4/1/2014

Ann Cole, Clerk
Florida Public Service Commission
Office of Commission Clerk
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

Dear Ms. Cole:

Enclosed please find an electronic copy of the 2014 Orlando Utilities Commission (OUC) Ten-Year Site Plan (TYSP). The 2014 OUC TYSP was prepared by Black & Veatch and is being submitted by Black & Veatch on behalf of OUC.

If you have any questions regarding the TYSP, please do not hesitate to contact me at (913) 458-7134.

Very truly yours,
BLACK & VEATCH CORPORATION

/s/ Bradley Kushner

Bradley Kushner
Principal Consultant

2014 TEN-YEAR SITE PLAN

PREPARED FOR

Orlando Utilities Commission

APRIL 2014

BLACK & VEATCH
Building a world of difference.®

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1 Executive Summary

This report documents the 2014 Orlando Utilities Commission (OUC) Ten-Year Site Plan pursuant to Section 186.801 Florida Statutes and Section 25-22.070 of Florida Administrative Code. The Ten-Year Site Plan provides information required by this rule, and consists of the following additional sections:

- Utility System Description (Section 2.0)
- Strategic Issues (Section 3.0)
- Forecast of Peak Demand and Energy Consumption (Section 4.0)
- Demand-Side Management (Section 5.0)
- Forecast of Facilities Requirements (Section 6.0)
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- Environmental and Land Use Information (Section 10.0)
- Conclusions (Section 11.0)
- Ten-Year Site Plan Schedules (Section 12.0)

This Ten-Year Site Plan integrates the power sales, purchases, and loads for the City of St. Cloud (St. Cloud), the partial requirements power sale to the City of Vero Beach (Vero Beach), the power sale to the City of Bartow (Bartow), the power sale to the City of Lake Worth (Lake Worth), the power sale to the City of Winter Park (Winter Park), and the power sale to Florida Power & Light Company (FPL) into the analyses, as OUC has power supply agreements with these counterparties. OUC has assumed responsibility for supplying all of St. Cloud's loads through 2032 and supplementing Vero Beach's loads for calendar year 2014 (the agreement with Vero Beach originally called for OUC to supplement Vero Beach's loads through 2032 with provisions for further extension upon contract expiration; however, Vero Beach has been in discussions with FPL regarding the sale of the utility, and this Ten-Year Site Plan assumes that OUC will no longer provide power to Vero Beach after December 31, 2014)[1]. OUC has a contract to provide power to Bartow during the 2011 through 2017 period, a contract to sell power to FPL during the 2015 through 2017 period, a contract to sell power to Lake Worth during the 2014 through 2018 period (with provisions for future extension; such extensions have not been assumed for purposes of this Ten-Year Site Plan), and a contract to sell power to Winter Park during the 2014 through 2019 period. Load forecasts for OUC and St. Cloud have been integrated into one forecast, and details of the aggregated load forecast are provided in Section 4.0. A banded forecast is provided with base case growth, high growth, and low growth scenarios. The power OUC is currently planning on providing to Vero Beach, FPL, Bartow, Lake Worth, and Winter Park is discussed in Section 2.0.

OUC is a member of the Florida Municipal Power Pool (FMPP), which consists of OUC, Lakeland Electric (Lakeland), and the Florida Municipal Power Agency (FMPA) All-Requirements Project. Power for OUC is supplied by units owned entirely by OUC, as well as units in which OUC maintains joint ownership and power purchases. OUC's available capacity as of January 1, 2014 including capacity from units owned by OUC, St. Cloud's entitlement to Stanton Energy Center Unit 2, and

[1] As discussed in more detail throughout this Ten-Year Site Plan, as part of the negotiations related to early termination of the supplemental power sale to Vero Beach, OUC will receive Vero Beach's ownership interests in Stanton Energy Center Units 1 and 2. OUC is assumed to sell 38 MW of power to FPL during calendar years 2015, 2016, and 2017.

OUC's current power purchases, provides total net summer capacity of approximately 1,852 MW and total net winter capacity of approximately 1,940 MW[2].

As illustrated in Section 6.0 of this report, OUC is projected to have adequate capacity to maintain a 15 percent reserve margin throughout the period considered in this Ten-Year Site Plan.

[2] Net seasonal capacity ratings as of January 1, 2014. Includes capacity owned by OUC and St. Cloud, as well as OUC's contractual power purchases. Reflects capacity increases to St. Lucie completed in December 2012. Does not include capacity from Crystal River Unit 3, which, as discussed later in this Ten-Year Site Plan, has been retired.

2 Utility System Description

At the turn of the 20th century, John M. Cheney, an Orlando, Florida judge, organized the Orlando Water and Light Company and supplied electricity on a part-time basis with a 100 kW generator. Twenty-four hour service began in 1903. The population of the City of Orlando (City) had grown to roughly 10,000 by 1922 and Cheney, realizing the need for wider services than his company was capable of supplying, urged his friends to work and vote for a $975,000 bond issue to enable the citizens of Orlando to purchase and municipally operate his privately owned utility. The bond issue carried almost three to one, as did a subsequent issue for additional improvements. The citizens of Orlando acquired Cheney's company and its 2,795 electricity and 5,000 water customers for a total initial investment of $1.5 million.

In 1923, OUC was created by an act of the state legislature and was granted full authority to operate electric and water municipal utilities. The business was a paying venture from the start. By 1924, the number of customers had more than doubled and OUC had contributed $53,000 to the City. When Orlando citizens took over operation of their utility, the City's population was less than 10,000; by 1925, it had grown to 23,000. In 1925, more than $165,000 was transferred to the City, and an additional $111,000 was transferred in 1926.

Today, OUC operates as a statutory commission created by the legislature of the State of Florida as a separate part of the government of the City. OUC has full authority over the management and control of the electric and waterworks plants in the City and has been approved by the Florida legislature to offer these services in Osceola County as well as Orange County. OUC's charter allows it to undertake, among other things, the construction, operation, and maintenance of electric generation, transmission, and distribution systems, chilled water systems, as well as water production, transmission, and distribution systems to meet the requirements of its customers.

In 1997, OUC entered into an Interlocal Agreement with the City of St. Cloud in which OUC assumed responsibility for supplying all of St. Cloud's loads for the 25 year term of the agreement, which added an additional 150 square miles of service area. OUC also assumed management of St. Cloud's existing generating units and purchase power contracts. This agreement has been extended through 2032.

2.1 EXISTING GENERATION SYSTEM

Presently, OUC has ownership interests in five electric generating plants, which are described further in this section. Table 2-1 summarizes OUC's generating facilities, which include the following:

- Stanton Energy Center Units 1 and 2, Stanton A, and Stanton B.
- Indian River Plant Combustion Turbine Units A, B, C, and D[3].
- Duke Energy Florida (formerly Florida Progress Energy Florida) Crystal River Unit 3 Nuclear Generating Facility. Crystal River 3 is retired..
- Lakeland Electric McIntosh Unit 3.
- Florida Power & Light Company (FPL) St. Lucie Unit 2 Nuclear Generating Facility.

[3] As discussed throughout this report, OUC has purchased the steam units at the Indian River site; however, given the current condition of the units, these units do not currently provide generating capacity for OUC.

Table 2-1 Summary of OUC Generation Facilities

(As of January 1, 2014)

PLANT NAME	UNIT NO.	LOCATION (COUNTY)	UNIT TYPE	FUEL		FUEL TRANSPORT		COMMERCIAL IN-SERVICE MONTH/YEAR	EXPECTED RETIREMENT MONTH/YEAR	NET CAPABILITY	
				Pri	Alt	Pri	Alt			Summer MW	Winter MW
Indian River	A	Brevard	GT	NG	FO2	PL	TK	06/89	Unknown	18[(1)]	23.4[(1)]
Indian River	B	Brevard	GT	NG	FO2	PL	TK	07/89	Unknown	18[(1)]	23.4[(1)]
Indian River	C	Brevard	GT	NG	FO2	PL	TK	08/92	Unknown	85.3[(2)]	100.3[(2)]
Indian River	D	Brevard	GT	NG	FO2	PL	TK	10/92	Unknown	85.3[(2)]	100.3[(2)]
Stanton Energy Center	1	Orange	ST	BIT	NG	RR	PL	07/87	Unknown	302.3[(3)]	302.3[(3)]
Stanton Energy Center	2	Orange	ST	BIT	NG	RR	PL	06/96	Unknown	339.7[(4)]	339.7[(4)]
Stanton Energy Center	A	Orange	CC	NG	FO2	PL	TK	10/03	Unknown	173.6[(5)]	184.8[(5)]
Stanton Energy Center	B	Orange	CC	NG	FO2	PL	TK	02/10	Unknown	298	312
McIntosh	3	Polk	ST	BIT	--	RR	--	09/82	Unknown	133[(6)]	136[(6)]
Crystal River	3	Citrus	NP	UR	--	TK	--	03/77	02/2013	13[(7)]	13[(7)]
St. Lucie[(8)]	2	St. Lucie	NP	UR	--	TK	--	06/83	Unknown	60	60

[(1)]Reflects an OUC ownership share of 48.8 percent.
[(2)]Reflects an OUC ownership share of 79.0 percent.
[(3)]Reflects an OUC ownership share of 68.6 percent.
[(4)]Reflects an OUC ownership share of 71.6 percent and St. Cloud entitlement of 3.4 percent.
[(5)]Reflects an OUC ownership share of 28.0 percent.
[(6)]Reflects an OUC ownership share of 40.0 percent.
[(7)]Crystal River Unit 3 has been out of service since August 2009 and is retired. Capacity and energy associated with OUC's share of Crystal River Unit 3 is not reflected in this Ten-Year Site Plan, but is presented in this table for informational purposes.
[(8)]OUC owns approximately 6.1 percent of St. Lucie Unit No. 2. Reliability exchange divides 50 percent power from Unit No. 1 and 50 percent power from Unit No. 2. Capacity shown reflects capacity uprate completed in December 2012.

The Stanton Energy Center is located 12 miles southeast of Orlando, Florida. The 3,280 acre site contains Units 1 and 2, as well as Units A and B, and the necessary supporting facilities. Stanton Unit 1 was placed in commercial operation on July 1, 1987, followed by Stanton Unit 2, which was placed in commercial operation on June 1, 1996. Both units are fueled by pulverized coal and operate at emission levels that are within the Environmental Protection Agency (EPA) and the Florida Department of Environmental Protection (FDEP) requirement standards for sulfur dioxide (SO_2), nitrogen oxides (NO_x), and particulates. Stanton Unit 1 is a 441 MW net coal fired facility. OUC has a 68.6 percent ownership share of this unit, which provides 302 MW of capacity to the OUC system. Stanton Unit 2 is a 453 MW net coal fired generating facility. OUC maintains a 71.6 percent (324 MW) ownership share of this unit.

OUC has entered into an agreement with Kissimmee Utility Authority (KUA), FMPA, and Southern Company - Florida LLC (SCF) governing the ownership of Stanton A, a combined cycle unit at the Stanton Energy Center that began commercial operation on October 1, 2003. OUC, KUA, FMPA, and SCF are joint owners of Stanton A, with OUC maintaining a 28 percent ownership share, KUA and FMPA each maintaining 3.5 percent ownership shares, and SCF maintaining the remaining 65 percent of Stanton A's capacity.

Stanton A is a 2x1 combined cycle utilizing General Electric combustion turbines. Stanton A is dual fueled with natural gas as the primary fuel and No. 2 oil as the backup fuel. OUC maintains a 28 percent equity share of Stanton A, while purchasing 52 percent as described further in Section 2.2.

Stanton B is a 1x1 combined cycle utilizing General Electric combustion turbines. Stanton B is dual fueled with natural gas as the primary fuel and No. 2 oil as the backup fuel. OUC is the sole owner of Stanton B. The Indian River Plant is located 4 miles south of Titusville on US Highway 1. The 160 acre Indian River Plant site contains three steam electric generating units (No. 1, 2, and 3) and four combustion turbine units (A, B, C, and D). The three steam turbine units were sold to Reliant in 1999, with OUC recently repurchasing the units. The combustion turbine units are primarily fueled by natural gas, with No. 2 fuel oil as an alternative. OUC has a partial ownership share of 48.8 percent, or 36 MW, in Indian River Units A and B as well as a partial ownership share of 79 percent (approximately 171 MW) in Indian River Units C and D. Given their current condition, the Indian River steam units do not provide generating capacity for OUC, but do provide OUC with future options for new generating capacity.

Crystal River Unit 3 is an 835 MW net nuclear generating facility operated by Duke Energy Florida, formerly Progress Energy Florida. OUC has a 1.6015 percent ownership share in this facility, providing approximately 13 MW to the OUC system. Given the current status of the unit, , this Ten-Year Site Plan does not reflect any capacity or energy being provided by Crystal River Unit 3.

McIntosh Unit 3 is a 340 MW net coal fired unit operated by Lakeland Electric. McIntosh Unit 3 has supplementary natural gas and refuse-derived fuel burning capability and is capable of burning up to 20 percent petroleum coke. Lakeland Electric has ceased burning refuse-derived fuel at McIntosh Unit 3 for operational and landfill reasons. For purposes of the analyses performed in this application, it was assumed that McIntosh Unit 3 would burn coal priced identically to that used for Stanton Units 1 and 2. OUC has a 40 percent ownership share in McIntosh Unit 3, providing approximately 133 MW of capacity to the OUC system.

St. Lucie Unit 2 is a 853 MW net nuclear generating facility operated by FPL. OUC has a 6.08951 percent ownership share in this facility, providing approximately 60 MW of generating capacity to OUC. A reliability exchange with St. Lucie Unit 1 results in half of the capacity being supplied by St. Lucie Unit 1 and half by St. Lucie Unit 2.

As part of the Interlocal Agreement with St. Cloud, OUC has operating control of the generating units owned by St. Cloud. The St. Cloud internal combustion generating units (totaling 21 MW of grid-connected capacity, and an additional 6 MW that has never been connected to the grid) were retired as of March 2008. St. Cloud also has an entitlement to capacity from Stanton Unit 2 associated with its purchase through FMPA (related to FMPA's participation in the Stanton II Project). FMPA's ownership in Stanton Unit 2 through the Stanton II Project is 23.2 percent and St. Cloud's purchase from FMPA's Stanton Unit 2 ownership is 14.67 percent, entitling St. Cloud to approximately 15.4 MW of capacity from Stanton Unit 2.

2.2 PURCHASE POWER RESOURCES[4]

OUC has a purchase power agreement (PPA) with SCF for 80 percent of SCF's ownership share of Stanton A. Under the original Stanton A PPA OUC, KUA, and FMPA agreed to purchase all of SCF's 65 percent capacity share of Stanton A for 10 years, although the utilities retained the right to reduce the capacity purchased from SCF by 50 MW each year, beginning in the sixth year of the PPA, as long as the total reduction in capacity purchased did not exceed 200 MW. The utilities originally had options to extend the PPA beyond its initial term. OUC, KUA, and FMPA have unilateral options to purchase all of Stanton A's capacity for the estimated 30 year useful life of the unit. Subsequent amendments to the original PPA continue OUC's capacity purchase through the 20th year of the PPA. Beginning with the 16th contract year and ending with the 20th contract year, OUC will maintain the irrevocable right to reduce the amount of capacity purchased by either 20 MW or 40 MW per year, as long as the total reduction in purchased capacity does not exceed 160 MW. Additionally, OUC has the option of terminating the PPA after the 20th contract year, which ends September 30, 2023. Rather than terminating the PPA, OUC may elect to continue the PPA for an additional 5 years under the Extended Term option beginning October 1, 2023, and ending September 30, 2028. OUC may subsequently continue the PPA for an additional 5 years under the Further Extension option beginning October 1, 2028, and ending September 30, 2033.

2.3 POWER SALES CONTRACTS

OUC has had a number of power sales contracts with various entities over the past several years. OUC is currently contractually obligated to supply supplementary power to Vero Beach under a partial requirements power sales contract. The original duration of the contract was 20 years (the contract went into effect January 1, 2010) with provisions for further extension upon contract expiration. Under the agreement, OUC was to be the exclusive power provider and marketer for Vero Beach. Recent negotiations between OUC and Vero Beach have led to early termination of this power sales agreement, with the contract reflected to expire December 31, 2014 in this Ten-Year Site Plan. Upon expiration of the sale to Vero Beach, OUC will provide power to FPL for a 3 year period (2015 through 2017). OUC also has a contract to provide power to Bartow for the 2011 through 2017 period. Bartow purchases the power from OUC, and then distributes it to its customers through its existing infrastructure. OUC has a 3 year contract, with two, one year extension options, to provide power to Lake Worth, beginning in 2014. OUC also has a contract to sell power to Winter Park for the 2014 through 2018 period.

For purposes of this Ten-Year Site Plan, OUC has assumed the winter and summer capacities and annual energy presented in Table 2-2 will be provided to Vero Beach, FPL, Bartow, Lake Worth, and Winter Park.

[4] OUC's renewable power purchases are discussed in Section 2.4 of this Ten-Year Site Plan.

Table 2-2 Annual Summer and Winter Peak Capacity (MW) and Annual Net Energy for Load (GWh) to be Provided to Vero Beach, FPL, Bartow, Lake Worth, and Winter Park.

YEAR	SUMMER MW				
	VER	FPL	Bartow	Lake Worth	Winter Park
2014	98	0	64	88	19
2015	0	38	65	89	19
2016	0	38	66	91	19
2017	0	38	66	92	19
2018	0	0	0	93	19
2019	0	0	0	0	19
YEAR	**WINTER MW**				
	VER	FPL	Bartow	Lake Worth	Winter Park
2014	98	0	61	0	19
2015	0	38	64	76	19
2016	0	38	65	77	19
2017	0	38	66	78	19
2018	0	0	66	79	19
2019	0	0	0	0	19
YEAR	**ANNUAL GWH**				
	VER	FPL	Bartow	Lake Worth	Winter Park
2014	365	0	274	435	93
2015	0	216	277	439	94
2016	0	216	280	444	95
2017	0	216	282	449	96
2018	0	0	0	454	97
2019	0	0	0	0	98

2.4 OUC'S RENEWABLE ENERGY AND SUSTAINABILITY INITIATIVES AND COMMUNITY INVOLVEMENT

OUC is actively incorporating renewable technologies in their generation portfolio and taking other steps to reduce carbon emissions. Technologies such as solar and landfill gas allow OUC to provide the necessary power demand to customers while reducing harmful effects on the environment. Renewable energy, energy efficiency, sustainability and community activities are crucial to reducing the total needed demand for power. OUC's recent renewable energy and sustainability initiatives, as well as OUC's recent activities in the community and customer education initiatives, are discussed in the following sub-sections. [5]

[5] Please refer to Section 5.0 of this Ten-Year Site Plan for discussion of OUC's conservation and demand-side management programs.

2.4.1 Solar

In addition to continuing to promote DSM and conservation, OUC is actively working to promote customer awareness of opportunities to increase the role of renewable energy. One such initiative is OUC's Green Pricing Program. Participation in this program helps add renewable energy to OUC's generation portfolio, improves regional air and water quality, and assists OUC in developing additional renewable energy resources. Program participants may pay an additional $5.00 on their monthly utility bills for each 200 kWh block blend of local bio-energy (75 percent), local solar energy (20 percent) and purchased wind power (5 percent); or $10.00 for each 200 kWh block of 100 percent solar energy. There is no limit to the number of 200 kWh blocks that a participant may acquire to support funding of additional renewable energy to OUC's portfolio. Participation helps OUC develop cleaner alternative energy resources, such as solar, wind, and biomass. The annual per customer participation of 2,400 kWh is equivalent to the environmental benefit of planting 3 acres of forest, taking three cars off the road, preventing the use of 27 barrels of oil, or bicycling more than 30,575 miles instead of driving.

Further examples of OUC's commitment to renewable energy are OUC's environmentally friendly solar programs, which are available to both residential and commercial customers. These programs include the Solar Photovoltaic (PV) Net Metering Program and the Solar PV Credit Program, and the Solar Thermal program, which generates heat for domestic water heating systems. Participating customers in the PV Credit program can install a solar PV system on their homes or business and sign an agreement allowing OUC to retain the rights to the environmental benefits or attributes. For the Net Metering Program, participating customers receive a monthly production credit on their utility bills for energy produced in excess of what the home or business can use. Any excess electricity generated and delivered by the solar PV systems back to OUC's electric grid is credited at the customer's retail electric rate. Customers participating in the Solar PV Credit program receive a monthly credit of $0.05 for each kWh produced from their system. Commercial Solar Thermal Program participants receive a monthly credit of $0.03 for each kWh equivalent produced by their solar hot water system. Customers participating in the Residential Solar Thermal Program receive a rebate of up to $1,000 for installing a solar hot water system. Residential customers may also benefit from OUC's partnership with the Orlando Federal Credit Union to provide low interest loan options for solar thermal and PV installations, helping to keep the net monthly cost low, all of which can be included on the OUC bill. Additional federal tax credits may also be available to help minimize costs. To date, a total of 557 customers participate in OUC's solar incentive programs adding 10.9 MW of distributed capacity to OUC's energy portfolio.

To further facilitate development of solar energy, OUC supported Orange County in its efforts to obtain a $2.5 million grant from the Florida Department of Environmental Protection to install a 1 MW solar array on the Orange County Convention Center. The project "went live" in May 2009 and is currently producing clean, green power. In 2008, Orlando was designated a "Solar American City" by the U.S. Department of Energy (DOE). The ongoing partnership between OUC, City of Orlando and Orange County received $450,000 in funding and technical expertise to help develop solar projects in OUC's service area that can be replicated across the country.

In September 2009, OUC and clean energy company Petra Solar teamed up to launch the first utility pole-mounted solar photovoltaic system in Florida. Ten of Petra Solar's SunWave™ intelligent photovoltaic solar systems have been installed on OUC utility poles along Curry Ford Road. Together the panels can generate up to 2 KW, about enough to power a small home. The innovative solar panel demonstration project is expected to help enhance the Smart Grid capabilities and reliability of the electric distribution grid. Petra Solar worked in collaboration with the University of Central Florida in developing the pole-mounted approach to clean energy generation. The

SunWave systems not only turn street light and utility poles into solar generators, they also communicate with the electric grid and can offer smart grid capabilities. The systems can improve grid reliability through real-time communications between solar generators in the field and the utility control center. In addition, the systems enhance electric distribution grid reliability through a host of capabilities such as voltage and frequency monitoring and reactive power compensation.

During 2010, OUC invested $100,000 in an educational partnership with the Orlando Science Center to build a 31.5 kW PV array atop the Science Center's observatory. The system provides about 42,660 kWh of electricity per year, or enough power to serve about four homes. The PV installation not only provides green power to the Science Center but also an educational experience on the science of solar energy for the thousands of children who visit the center each year.

OUC has added solar to its fleet of natural gas, coal, and landfill gas generation already on site at Stanton Energy Center. Duke Energy owns and maintains the Stanton Solar Farm, which produces about 5.1 MW, or enough power for about 600 homes. Brought on-line in late 2011, the Stanton Solar Farm consists of more than 25,000 modules featuring solar panels with a patented single-axis tracking system design that can withstand Category 4 hurricane winds while increasing electricity output by 30 percent. OUC plans to purchase the output of this installation, which is the first solar farm in Orange County, for 20 years.

In 2013 OUC built the first Community Solar Farm in Central Florida. This innovative project allowed customers to "buy a piece of the sun" and receive the benefits of solar without having to install it on their own roof. The 400 KW system sold out in six days and had a total of 39 customers sign up.

2.4.2 Landfill Gas

The gas produced by the biological breakdown of organic matter in landfill is known as methane or landfill gas. It is created by the decomposition of wet organic waste under anaerobic, or oxygen-less, conditions in a landfill. This gas is considered a renewable energy source because the anaerobic digestion process continues as waste materials are constantly added to the landfill. In partnership with Orange County, OUC captures methane gas emissions from county landfill cells, and pipes it to the Stanton Energy center where it is co-fired with coal. In addition to helping to reduce greenhouse gas emissions, this project has the potential to displace more than 3 percent of the coal burned at the Stanton Energy Center. It will be capable of producing in excess of 100,000 MWh of reduced-emissions power and up to a total of 27 MW by 2018.

OUC has signed a 20-year renewable energy purchase power agreement for approximately 2.56 MW from landfill gas in Port Charlotte, and a 20-year renewable energy purchase power agreement for approximately 9 MW from landfill gas (the Shaw project).

2.4.3 Carbon Reduction

With more than 775 vehicles – ranging from plug-in hybrids to bucket trucks – OUC's fleet logs more than 4.7 million miles annually. OUC reduces their carbon footprint by using alternative fuels, purchasing more hybrids and recycling automotive products to help our environment. As part of an overall plan to reduce emissions in fleet, OUC uses"B20" – a blend of 80 percent petroleum diesel and 20 percent biodiesel – a clean-burning alternative fuel made from new or used vegetables oils and animal fats, including recycled cooking grease. Compared to petroleum diesel, biodiesel produces lower emissions, so it is better for the environment. B20 has been integrated seamlessly into the fueling system without any changes to vehicles or fuel storage and distribution equipment. Since 2006, nearly 829,331 gallons of B20 have been purchased, and the reduction in diesel fuel has

reduced OUC's carbon footprint by 2,111 metric tonnes of CO_2e (carbon dioxide equivalent). OUC uses biodiesel at the Pershing Fleet Center and the Gardenia site.

Embracing fuel-efficient technology as a commitment to green initiatives, OUC was the first municipal utility in Florida to acquire a plug-in hybrid that gets up to 99 miles per gallon. In addition to the three plug-ins, OUC has 21 other traditional hybrids in the fleet. OUC also moved forward with an agreement to develop the charging infrastructure, test, and lease 6 all-electric vehicles with a 100 mile range (the Nissan "Leaf"), and has also leased two Chevy Volts, which can run on gasoline or electricity.

OUC now has five hybrid bucket trucks and one auxiliary battery system to operate the aerial tower hydraulics. Bucket trucks are a promising application for hybrid technology since much of the vehicle's work is done when stationary. The hybrid diesel-electric system allows the main engine to be turned off while crews operate entirely off the battery.

OUC's Fleet Division has incorporated a number of eco-conscious policies, including the use of earth-friendly products and special care taken to dispose contaminated fuels according to environmental standards. Tires, batteries and oil filters are recycled through vendors, while freon, antifreeze and motor oil are handled on site. OUC also has a vehicle idling policy that requires the engine to be turned off after five minutes. Diesel engines use about one gallon of fuel per hour when idling, so this policy saves about $4 per hour per vehicle.

As part of OUC's commitment to alternative fuels and efficient transportation, three of the nine electric-vehicle charging stations at Reliable Plaza are powered by the sun. Located in the parking garage, the 16-panel solar array provides a total of 2.8 kW of power to charge the vehicles. At night or on a cloudy day when the sun is not shining, the power is drawn from Reliable Plaza. When the sun is shining but no car is charging, the power is fed back into the building. OUC can access a special website to track real time info and total system usage for its charging stations. A full charge takes about four hours for a Nissan Leaf. Users have a key fob for the charging station and supply their own power cord. Plug-in drivers can go to mychargepoint.net to locate available charging stations nationwide. Users register with Chargepoint to set up an account that links to their credit card. The power is billed by Nova Charge.

To help prepare Central Florida to support plug-ins, OUC partnered with the City of Orlando, Orange County, and others as part of a national non-profit initiative called Project Get Ready. OUC and the City of Orlando also hosted the national kickoff of the U.S. Department of Energy ChargePoint America Grant, which has provided nearly 300 public charging stations to Central Florida; 135 of these stations are located in OUC's service territory. OUC is developing an electric vehicle infrastructure solution for Greater Orlando, and as part of this effort is offering businesses the opportunity to participate by allocating space for charging stations. Participating businesses were given the option of owning the equipment or hosting the equipment. Customers that choose to own the equipment were reimbursed for installation costs. Customers that opted to host the equipment had no out of pocket expense. OUC installs, owns, and operates the equipment at hosted sites. OUC offers a rebate of $1,000 to commercial customers who install additional charging stations within its service territory.

2.4.4 Energy Efficiency and Sustainability

OUC's commitment to efficiency and sustainability is further demonstrated by Reliable Plaza, OUC's energy and water efficient center in south downtown that opened in 2008 and replaced OUC's 40-year-old Administration Building on South Orange Avenue. Reliable Plaza earned Gold Leadership in Energy and Environmental Design (LEED) certification in 2009, officially cementing the 10-story

administration and customer service center as the "Greenest Building in downtown Orlando." The non-profit U.S. Green Building Council awarded the Gold level certification after completing a review of the building's design and construction. Reliable Plaza also holds a Florida Water Star certification, a voluntary program for new and existing construction that encourages water efficiency in appliances plumbing fixtures, irrigation systems and landscapes. Reliable Plaza showcases a number of environmentally friendly features designed to use 28 percent less energy and 40 percent less water than a similarly sized facility. One of the more innovative offerings at Reliable Plaza is the interactive conservation education center. With a live link to the building's conservation systems, the center's touch screen gives customers real time data on how Reliable Plaza uses – and saves – energy and water. The center provides information on green building ideas and conservation tips customers can use at home.

2.4.5 OUC's Green Team

With the philosophy that changing an organization's culture requires both corporate and individual accountability, OUC has established the Green Team – a dedicated group of employee volunteers who are working to implement practical, sustainable operations in their respective work areas.

In addition to setting benchmarks and establishing metrics, the Green Team identifies ways to improve energy and water efficiency in OUC buildings, reduce waste, use product inventories more efficiently, lower emissions from operations, and create a healthier, happier environment for employees and customers.

With the Gold LEED-certified Reliable Plaza setting the standard, other OUC facilities have followed suit, implementing a number of environmental efforts, including:

- Retrofitting and upgrading light bulbs and ballasts
- Installing light sensors
- Turning up thermostats
- Cutting back on landscape and exterior building lighting
- Purchasing Energy Star-rated appliances when replacements are needed
- Using environmentally friendly cleaning products
- Upgrading HVAC systems
- Installing rain sensors on irrigation systems
- Cutting grass less frequently at water plants, substations and areas not highly visible to the public

Going forward, OUC is planning a number of new green initiatives. OUC currently has single stream recycling at all of its facilities and also recycles industrial materials such as wood pallets, utility meters, wire reels and copper. It has also developed internal policies such as electronic document storage, online document review, double-sided printing and specifies the use of recycled paper and office products whenever practicable. In the coming months, OUC will be focused on reducing its energy and water usage with efficiency upgrades at its Pershing and Gardenia facilities.

2.4.6 Community Activities

OUC participated in more than 100 community events, including the Ride for Ronald, to promote new programs, services and payment options, as well as conservation and safety tips. The events

ranged from an Earth Day celebration at Lake Eola and Fourth of July festivities in St. Cloud to the 16th Annual National Solar Tour and the Hispanic Business and Consumer Expo.

In addition, employees volunteered more than 7,700 hours and gave more than $160,900 to non-profits organizations through our annual giving campaign, OUCares. Since 1994, OUC's Project Care fund has helped more than 18,000 households and provided nearly $3 million in utility assistance. The annual OUC Charity Golf Tournament raised $35,000 for local non-profits.
In 2013, Conservation specialists conducted presentations, provided face-to face consultations, scheduled audits, and disseminated information on conservation programs. Below is a list of events OUC has participated in:

- Rollins College Renewable Incentives and EE for your Business Presentation
- City of Orlando Mayor's Neighborhood & Community Summit Event
- St. Cloud Life Expo
- Azalea Park HOA Presentation
- St. Cloud Spring Fling Event
- Valencia College Earth Day Event
- 2013 Hispanic Business Expo
- Lake Eola Earth Day
- OUC Service Center Earth Day Event
- Orlando Health Earth Day Event
- CNL Green Earth Day Fair
- City of Orlando National Night Out Event
- Orlando Housing Authority Community Energy Workshop
- St. James Cathedral School Earth Day Presentation
- Black Men's Health Summit & Wellness Expo
- Central Florida Hotel & Lodging HEAT Tradeshow
- Orlando Home & Garden Show
- Orange County Environmental Education Expo

Specific examples of community activities in which OUC was involved during 2013 are outlined below.

2.4.6.1 Lowe's Utility Partnership Event

OUC partnered with Lowe's in an effort to increase awareness of energy and water efficiency for our customers. We co-developed signage that sits in front of qualifying products in the retail stores in OUC's service territory. Specific messaging was put together to print on the Lowe's purchase receipts (only in stores within the OUC service territory) for qualifying products sold in their stores. The message suggests, if you are an OUC customer you may qualify for a rebate and then directs them to visit *www.ouc.com/rebates* for more details.

2.4.6.2 Water Cooler Project

For the seventh year in a row, OUC hosted the Water Color Project, a conservation-themed art program that encourages students to showcase the importance of saving water through their artwork. More than 2,700 students from 29 schools competed to have their artwork featured in an annual calendar, while middle and high school students decorate rain barrels that become a traveling exhibit that is displayed throughout the community.

2.4.6.3 Project Awesome

OUC and the Orlando Science Center delivered energy and water conservation workshops to fifth grade classrooms throughout OUC's service territory via Project AWESOME (Alternative Water & Energy Supply; Observation, Methods & Education). It was the fourth year of the educational program that promotes both water and energy conservation through a hands-on curriculum using content approved by OUC and meeting Sunshine State Standards. Projects included allowing students to make an aquifer, build a solar-powered car, and test low flow showerheads and compact fluorescent light bulbs (CFLs) against traditional fixtures as part of an electric and water conservation and alternative sources educational program. Project A.W.E.S.O.M.E., which launched in 2009, delivers two 90-minute classroom workshops—energy in the fall and water in the spring—to students in support of their Science FCAT preparation. A total of 368 classes with 7,300 students went through the curriculum.

2.4.7 Customer Education Initiatives

From providing better online access to their consumption history to designing convenient and effective conservation programs, OUC is arming customers with the information and tools they need to optimize the efficiency of their homes and businesses. While the tools and technologies we use might have changed, OUC's commitment to conservation has not.

2.4.7.1 Preferred Contractor Network

OUC's revamped its Preferred Contractor Network (PCN) in order to take the hassle out of home improvement by eliminating the guesswork and the paperwork. With the PCN, customers seeking to improve the efficiency of their home don't have to worry about finding a qualified contractor or submitting rebate forms and receipts. Instead they simply select an OUC-approved contractor who completes the work and provides the qualifying rebate at the point of sale. Customers can start saving energy, water and money right away. For the contractors who earn OUC's stamp of approval, they benefit by growing their business and promoting OUC's rebates.

2.4.7.2 Mobile Site

OUC continued to offer a mobile version of its website for handheld devices. The mobile site lets customers interact with OUC on the go. They can pay their bill, check their account, find a rebate or get conservation tips right from their cell phone. Customers have the same online access to *http://www.OUC.com* but in an easy-to-use mobile format.

2.4.7.3 Home Energy Reports Program

The Home Energy Reports Program, OUC's largest conservation effort to date serving 78,000 customers, encourages customers to conserve by comparing their consumption to their efficient neighbors. Participants receive regular emails or printed reports showing how they rank along with tips and suggestions on how they can improve. To administer the Home Energy Reports, OUC is working with Opower, a software company that helps utilities meet their efficiency goals through effective customer engagement.

2.4.7.4 Energy & Water Conservation DVD

OUC continued to offer a conservation video in an interactive DVD format in English or Spanish that walks customers through a "do-it-yourself" energy and water audit for their home that can help lower their utility bill. It is also available online at *http://www.ouc.com/waystosave*.

2.4.7.5 Media Overview

To reach the desired audience, OUC implemented a comprehensive media campaign that utilized print, online, television, radio, outdoor media and community partnerships. By diversifying their media, OUC is able to reach a broader range of customers and reinforce their commitment to showing customers how to reduce their energy and water use and ultimately their utility bills. See Appendix A for samples of marketing efforts.

2.4.7.6 Orlando Magic Partnership

After assisting with the energy and water efficiency features in the design phase of the Orlando Magic's new LEED certified home, OUC has continued its green partnership with the Orlando Magic since the Amway Center opened in October 2010:

- The promotion of the facility's LEED certification and its energy and water efficiency features
- Sponsorship of the NBA Green Week (April 2013)
- An interactive educational booth at home game Fan Fest events
- A public information campaign on www.orlandomagic.com.

With this partnership, OUC reaches many of its customers who attend Magic games or follow them on TV. In addition to the approximately 7,000 season ticket holders who reside in the OUC service territory, 87 corporations hold suites, loge boxes or legends suites at the arena. These include many large and mid-size commercial businesses that can benefit from OUC's commercial products and services.

2.4.7.7 Connections

Connections is a monthly newsletter sent to all OUC customers whether they receive a paper statement or e-bill. The Connections newsletters also are posted on *http://www.OUC.com* and feature information on OUC's programs, events and energy and water saving tips.

2.4.7.8 Social Media

Facebook and Twitter allow OUC to spotlight special events and programs in the community and provide a conservation tip of the day, consisting of 365 daily tips on how to save energy, water and money. OUC also utilizes OUC TV via YouTube to promote conservation and renewable initiatives.

2.5 TRANSMISSION SYSTEM

OUC's existing transmission system consists of 31 substations interconnected through approximately 333 miles of 230 kV, 115 kV, and 69 kV lines and cables. OUC is fully integrated into the state transmission grid through its twenty-one 230 kV, and one 69 kV metered interconnections with other generating utilities that are members of the Florida Reliability Coordinating Council (FRCC), as summarized in Table 2-3. Additionally, OUC is responsible for St. Cloud's four substations, as well as approximately 56 miles of 230 kV and 69 kV lines and cables. As presented in Table 2-4, the St. Cloud transmission system includes three interconnections.

Table 2-3 OUC Transmission Interconnections

UTILITY	KV	NUMBER OF INTERCONNECTIONS
FPL	230	2
Duke Energy Florida (DEF)	230	9
KUA	230	2
KUA/FMPA	230	2
Lakeland Electric	230	1
TECO	230	2
TECO/Reedy Creek Improvement District	230	2
DEF	69	1
Southern Company	230	1

Table 2-4 St. Cloud Transmission Interconnections

UTILITY	KV	NUMBER OF INTERCONNECTIONS
OUC	69	1
DEF	230	1
KUA	69	1

The upgrade of the 69 kV tie line from the St. Cloud Central substation to KUA has been delayed because of a road widening project and right of way issues along its path, and is scheduled for completion by summer 2016; Preliminary engineering is complete and full project approval and funding is anticipated in April 2014. The overhead portion of the existing St. Cloud 69 kV transmission line from the Central to the South substation is scheduled to be upgraded by summer 2018.

The upgrade of the Taft-Lakeland 230 kV transmission line from the existing 954 ACSR conductor to 1272 ACSS/TW conductor is complete. The power transfer capability of all the 230 kV transmission line sections is 840 MVA; the line sections are Osceola Substation to Lake Agnes Substation, Taft Substation to Cane Island Tap, Cane Island Tap to Osceola Substation, and Lake Agnes to McIntosh Substation. This Taft-Lakeland Upgrade project began in 2007 after the 2006 FRCC Planning Committee study entitled Florida Central Coordinated Study (FCCS) determined the need for many upgrades of central Florida facilities. Most central Florida Utilities had upgrade work as a result of the 2006 FCCS. The entire 45 miles of 230 kV transmission line from OUC Taft to Lakeland McIntosh substation, which is mainly routed along the Florida Department of Transportation (FDOT) Interstate 4 roadway, has been upgraded.

The 115/12.47 kV America Substation protective relaying and station power systems were completely upgraded to increase system reliability and support modifications to the substation that must be completed to allow for the next phase of the FDOT Interstate 4 / State Road 408 interchange project. The America upgrade project will have coordination activities with the FDOT and the Expressway Authority extending to approximately 2017.

The 230 k V and 115/12.47 kV Southwood Substation Retrofit Project includes power circuit breaker replacement, in addition to protective relaying and station power system upgrades to increase system reliability and support transmission line capacity increases realized from upgrade

projects. During site inspections in April 2010, extensive internal damage was detected in a 373 MVA, 230 / 115kV "bus tie" autotransformer. The autotransformer was replaced and was energized with load mid-May of 2011. Work at the Southwood Substation, which consists of the remainder of the protective relay retrofit work, is scheduled for completion by fall 2014. Two of the 115kV transmission lines into Southwood Substation are being upgraded to about 360 MVA to meet planning requirements. The Southwood to Holden line upgrade is to be complete by summer 2014, and the Southwood to MetroWest line upgrade is scheduled for completion by summer 2015.

Various 115 kV transmission projects upgraded to about 360 MVA by summer 2013 to move power more effectively to the downtown Orlando region. Upgrades were performed on the transmission lines terminating at the following substations: Pershing to Michigan, Pershing to Grant, MetroWest to Turkey Lake, America to Kaley, and Pine Hills to Country Club. The Pine Hills to Turkey Lake transmission line is scheduled for upgrade by summer 2016.

In accordance with a reimbursement contract, NRG (previously Reliant Energy, GenOn) is having OUC upgrade St Cloud facilities by June 2014. A 224 MVA, 230 / 69kV autotransformer is being added at the St Cloud South Substation, and the St Cloud 69kV North to East transmission line will be upgraded to not less than 150 MVA.

To maintain reliable and economic service and proactively plan for the future at key locations, OUC is evaluating numerous upgrades to its transmission system. While these upgrades vary in scope and timing, the following identifies the higher priority, near-term transmission system upgrades planned by OUC:

- Continued conceptual permitting and design for the future Stanton South 230 kV Substation for future generation needs. The site will address system stability, redundancy, and available fault current issues.
- Replacement and upgrade of aging transmission infrastructure within the corridor from Pershing to Stanton to Indian River. The 115 kV double-circuit line from Pershing to Stanton will be upgraded from 150 MVA to 400 MVA by summer 2015. During preliminary engineering to be completed by fall 2014, upgrade options will be studied for the 230kV double-circuit line from Pershing to Stanton.
- Addition of several distribution transformer additions to existing substations may be required; load growth will determine when these transformer additions will be required. A substation distribution transformer will be added to the AIP substation by summer 2015.
- An engineering study of the 230 kV Stanton to Taft corridor is scheduled for completion by fall 2015 to determine future upgrade and increased power transfer options. Upon completion of the study, the best, most fiscally responsible option(s) will be pursued.

3 Strategic Issues

OUC incorporates a number of strategic considerations while planning for the electrical system. This section provides an overview of a number of these strategic considerations.

3.1 STRATEGIC BUSINESS UNITS

OUC is currently organized into two strategic business units: the Electric and Water Production (EWP) and the Electric and Water Delivery (EWD) business units.

3.1.1 Electric and Water Production Business Unit

The EWP business unit has structured its operations based on a competitive environment that assumes that even OUC's customers are not captive. EWP will only be profitable if it can produce electricity and water that is competitively priced in the open market. In line with this strategy, OUC is continually studying strategic options to improve or reposition its generating assets, such as the sale of the Indian River steam units in 1999 and the addition of new units and power purchase agreements, and the recent repurchase of the Indian River steam units (which provides OUC with full control over the Indian River site, and additional alternatives for future new generating resources, including possible repowering of the units)[6]. In addition, OUC formally instituted its Energy Risk Management Program in 2000.

OUC's generating system has been designed over the years to take advantage of fuel diversity and the resultant system reliability and economic benefits. OUC's longstanding intent to achieve diversity in its fuel mix is evidenced by its participation in other generating facilities in the State of Florida. The first such endeavor occurred in 1977 when OUC secured a share of the Crystal River Unit 3 nuclear plant, followed by the acquisition of an ownership share in Lakeland Electric's McIntosh Unit 3 coal fired unit in 1982. In 1983, OUC also acquired a share of the St. Lucie Unit 2 nuclear unit. OUC's current mix of wholly and jointly owned capacity is summarized in Table 3-1.

As shown in Table 3-1, coal represents approximately 48.7 percent of the winter generating capacity (approximately 50.7 percent summer) and natural gas represents approximately 47.5 percent of the winter generating capacity (approximately 45.3 percent summer) either wholly or jointly owned by OUC. With the inclusion of OUC's purchased power resources, coal represents approximately 39.9 percent of the winter generating capacity (approximately 41.4 percent summer) and natural gas represents approximately 56.9 percent of the winter generating capacity (approximately 55.0 percent summer).

Given its current retirement, Crystal River 3 is not being included among the generating resources reflected in this Ten-Year Site Plan. As discussed in Section 2.0 of this Ten-Year Site Plan, OUC is expected to receive Vero Beach's capacity associated with Stanton Energy Center Units 1 and 2 and St. Lucie Unit 2 as part of the terms of the early termination of OUC's power sale contract to Vero Beach. While these factors are not reflected in Table 3-1, they are considered in the projections of future requirements and economic analysis performed for and included in this Ten-Year Site Plan.

The diversity of OUC's fuel supply provides protection against disruption of supply while simultaneously providing economic opportunities to reduce cost to customers. Additional details of OUC's generating facilities are presented in Table 2-1 and Schedule 1 of Section 12.0 of this Ten-Year Site Plan.

[6] Based on the current condition of the Indian River steam units, OUC is not currently assigning a firm capacity value to the units for purposes of capacity planning.

Table 3-1 Generation Capacity (MW) Owned by OUC by Fuel Type
(as of January 1, 2013)

PLANT NAME	WINTER CAPACITY				SUMMER CAPACITY			
	Coal	Nuclear	Gas/Oil	Total	Coal	Nuclear	Gas/Oil	Total
Stanton	627[1]		497	1,124	627		472	1,099
Indian River			247	247			207	207
Crystal River[2]		0		0		0		0
C.D. McIntosh Jr.	136			136	133			133
St. Lucie[3]		60		60		60		60
Total (MW)	**763**	**60**	**744**	**1,567**	**760**	**60**	**679**	**1,499**
Total (percent)	**48.7**	**3.8**	**47.5**	**100.0**	**50.7**	**4.0**	**45.3**	**100.0**

[1] Includes OUC's share of the landfill gas burned in Stanton Units 1 and 2.
[2] As discussed previously, Crystal River 3 is currently out of service and expected to be retired rather than returned to service.
[3] Capacity shown for St. Lucie reflects recent capacity uprates.

OUC's use of alternative or renewable fuels is enhanced by the capability to burn a mixture of petroleum coke in McIntosh Unit 3, along with coal. Petroleum coke is a waste by-product of the refining industry and in addition to the benefits of using a waste product, petroleum coke's lower price may result in an economic advantage compared to burning 100 percent coal. Tests have been done that indicate the unit has the ability to use petroleum coke for approximately 20 percent of the fuel input. Permits have been modified and approved for this level of use.

OUC's fuel diversity is further enhanced by the renewable energy technologies that contribute to OUC's generating resources. OUC's renewable resources are discussed in detail in Section 2.4 of this Ten-Year Site Plan.

3.1.2 Electric and Water Delivery Business Unit

OUC's EWD business unit focuses on providing OUC's customers with the most reliable electric service possible. Formerly called the Electric Distribution Business Unit, the unit was renamed after merging with OUC's Electric Transmission Business Unit, which was being phased out with the anticipated creation of a regional independent transmission organization.

OUC's leadership in providing reliable electric distribution service is demonstrated by its commitment to making initial investments in high quality material and equipment. Additionally, approximately 60 percent of OUC's distribution system is underground, protecting it from trees and high winds. OUC's dependability is also attributable to its proactive maintenance programs to identify and correct potential problems, proactive replacement of old equipment, and a tree-trimming program that minimizes tree-related service disruptions. OUC's reliability is demonstrated by the fact that during 2013, OUC once again led the State of Florida in key performance indicators related to power restoration.

3.2 REPOSITION OF ASSETS

As a strategic consideration, OUC has been working on repositioning its assets. One major consideration was the sale of its Indian River power plant steam units to Reliant Energy in 1999[7]. The sale of the Indian River steam units allowed OUC to take positions in Stanton A and B and to update and diversify its generation portfolio. The sale offered OUC the ability to replace the less competitive oil and gas steam units with more competitive combined cycle generation. In 2007 OUC broke ground on the Stanton B project[8] and, as part of the agreement associated with the termination of the gasification portion of Stanton B, acquired a 165 acre tract of land in its service territory situated near it highest growth areas. The land is in an industrial area and is ideal for a new power generation site, having access to important infrastructure including a rail spur, natural gas lines, and OUC-owned and operated transmission lines.

3.3 FLORIDA MUNICIPAL POWER POOL

In 1988, OUC joined with Lakeland Electric and the FMPA's All-Requirements Project members to form the FMPP. Later, KUA joined FMPP. Over time, FMPA's All-Requirements Project has added members as well. FMPP is an operating-type electric pool, which dispatches all the pool members' generating resources in the most economical manner to meet the total load requirements of the pool. The central dispatch is providing savings to all parties because of reduced commitment costs and lower overall fuel costs. OUC serves as the FMPP dispatcher and handles all accounting for the allocation of fuel expenses and savings. The term of the pool agreement is 3 years and automatically renews until terminated by the consent of all participants.

OUC's participation in FMPP provides significant savings from the joint commitment and dispatch of FMPP's units. Participation in FMPP also provides OUC with a ready market for any excess energy available from OUC's generating units.

3.4 SECURITY OF POWER SUPPLY

OUC currently maintains interchange agreements with other utilities in Florida to provide electrical energy during emergency conditions. The reliability of the power supply is also enhanced by metered interconnections with other Florida utilities including nine interconnections with Progress Energy Florida (formerly Florida Power Corporation), four with KUA, two each with Tampa Electric Company and Reedy Creek Improvement District, two with FPL, and one each with Lakeland Electric and St. Cloud. In addition to enhancing reliability, these interconnections also facilitate the marketing of electric energy by OUC to and from other electric utilities in Florida.

In addition, in 2013 OUC entered into a new four-year contract for the storage of natural gas to manage price volatility and provide backup fuel for emergency situations. The fuel will provide up to 30,000 MBtu/day to help ensure power reliability.

[7] As discussed previously, OUC recently repurchased the Indian River steam units. Given the current condition of the units, OUC is not assigning a capacity value for purposes of capacity planning. The purchase of the units provides OUC with full control over the Indian River site and additional alternatives for future generation, including possible repowering.

[8] Originally proposed to be an integrated gasification combined cycle (IGCC) unit, Stanton B was designed to be able to run as a standalone natural gas unit with the gasification portion as an alternative fuel source. In 2007, OUC made the decision not to move forward with the gasification portion of Stanton B, and the unit began commercial operation in February 2010 as a 1x1 combined cycle unit operating on natural gas as the primary fuel with the capability to utilize fuel oil as a secondary fuel source.

3.5 ENVIRONMENTAL PERFORMANCE[9]

As the quality of the environment is important to Florida, and especially important to the tourist-attracted economy in Central Florida, OUC is committed to protecting human health and preserving the quality of life and the environment in Central Florida. To demonstrate this commitment, OUC has chosen to operate their generating units with emission levels below those required by permits and licenses by equipping its power plants with the best available environmental protection systems. As a result, even with a second unit in operation, the Stanton Energy Center is one of the cleanest coal fired generating stations in the nation. Unit 2 is the first of its size and kind in the nation to use selective catalytic reduction (SCR) to remove nitrogen oxides (NO_x). Using SCR and low-NO_x burner technology, Stanton 2 successfully meets the stringent air quality requirements imposed upon it. OUC is considering adding SCR to Stanton Unit 1, as well as taking measures to increase the efficiency of the Stanton Unit 1 and Unit 2 steam turbine generators. Stanton A incorporates environmentally advanced technology and enables OUC to diversify its fuel mix while adding more flexibility to OUC's portfolio of owned generation and purchased power. As its newest generating asset, Stanton B further contributes to OUC's environmentally responsible portfolio of generating resources.

This superior environmental performance not only preserves the environment, but also results in many economic benefits, which help offset the costs associated with the superior environmental performance. For example, the high quality coal burned at Stanton contributes to the high availability of the units as well as their low heat rates. Additionally, OUC has installed natural gas igniters for both Stanton 1 and Stanton 2, eliminating the use of No. 6 fuel oil and reducing the amount of coal burned during operations when economical to do so.

Further demonstrating its environmental commitment to clean air, OUC has signed a contract to burn the methane gas collected from the Orange County landfill adjacent to Stanton Energy Center. Methane gas, when released into the atmosphere, is considered to be 20 times worse than carbon dioxide in terms of possible global warming effects. Stanton 1 and Stanton 2 both have the capability of burning methane.

OUC has also voluntarily implemented a product substitution program not only to protect workers' health and safety but also to minimize hazardous waste generation and to prevent environmental impacts. The Environmental Affairs and the Safety Divisions constantly review and replace products to eliminate the use of hazardous substances. To further prevent pollution and reduce waste generation, OUC also reuses and recycles many products.

3.5.1 Emphasis on Sustainability

OUC completed its first greenhouse gas inventory for the entire company in 2008 and updates the inventory annually. This report helps OUC analyze how it impacts the environment, detailing both operating emissions and ways to reduce greenhouse gases. The greenhouse gas inventory was only a part of a larger initiative to perform a comprehensive sustainability audit of every department in the company. The goal of this effort is to understand both short-term and long-term opportunities to reduce the corporate carbon footprint in all departments and business functions. A comprehensive sustainability audit was completed in 2009 and will serve as a guide to help OUC develop new environmental initiatives.

[9] Please refer to Section 2.4 of this Ten-Year Site Plan for a detailed discussion of OUC's renewable generating technologies and other environmental initiatives.

OUC's commitment to efficiency and sustainability is further demonstrated by the completion of Reliable Plaza, OUC's new energy and water efficient center in south downtown which replaces OUC's previous South Orange Avenue home. OUC's Reliable Plaza has earned Gold Leadership in Energy and Environmental Design (LEED) certification, officially cementing the 10-story administration and customer service center as the "Greenest Building in downtown Orlando." The non-profit U.S. Green Building Council awarded the Gold level certification after completing a review of the building's design and construction. Reliable Plaza also holds a Florida Water Star certification, a voluntary program for new and existing construction that encourages water efficiency in appliances plumbing fixtures, irrigation systems and landscapes. Reliable Plaza showcases a number of environmentally friendly features and uses 28 percent less energy and 40 percent less water than a similarly sized facility. One of the more innovative offerings at Reliable Plaza is the interactive conservation education center. With a live link to the building's conservation systems, the center's touch screen gives customers real time data on how Reliable Plaza uses – and saves – energy and water. The center also can give information on green building ideas and conservation tips customers can use at home.

OUC partnered with the Disney Entrepreneur Center for a pilot efficiency program that will offer conservation credits to small businesses that may be experiencing financial difficulties. OUC also began its "Power to Save" campaign, which allowed customers to view OUC conservation and education videos on demand on Bright House Networks. Viewers could access information around the clock and at no cost. The campaign provided access that customers requested and OUC saved money and resources by offering a waste-free alternative to mailing out conservation DVDs.

3.6 COMMUNITY RELATIONS

Owned by the City of Orlando and its citizens, OUC is especially committed to being a good corporate citizen and neighbor in the areas it serves or impacts.

In Orange, Osceola, and Brevard Counties, where OUC serves customers and/or has generating units, OUC gives its wholehearted support to education, diversity, the arts, and social-service agencies. An active Chamber of Commerce participant in all three counties, OUC also supports area Hispanic Chambers and the Metropolitan Orlando Urban League. As a United Arts trustee, OUC has allowed its historic Lake Ivanhoe Power Plant to be turned into a performing arts center. OUC is also a corporate donor for WMFE public television and has been a co-sponsor of the "Power Station" exhibit at the Orlando Science Center. OUC has also donated $100,000 to the Orlando Science Center to help sponsor the alternative-energy exhibit "Our Energy Future" that includes a permanent exhibit in Orlando and a component that travels to museums throughout the country.

OUC conservation support personnel have made hundreds of public appearances related to conservation at schools, business expos, professional associations, and homeowner association meetings. Conservation specialists conducted presentations, provided face to face consultations, scheduled audits, and disseminated information on conservation programs. OUC also sponsors energy-related events, such as the Florida Renewable Energy Association's Renewable Energy Expo, which stresses the importance of reducing individual carbon footprints and introduces the general public to entrepreneurs and educators who are working on the challenges of energy independence and global climate change.

Long a supporter of Habitat for Humanity Orlando, OUC saw Habitat's first town home project – Staghorn Villas – as an opportunity to provide local families with affordable homes that could also help them keep their utility costs in check. OUC donated $60,000 in energy-efficient features for Staghorn Villas, an $8 million town home community that will provide affordable housing for 58

local families. OUC also provided more than 870 compact florescent light bulbs and upgraded all lighting systems throughout the community. Siemens also partnered on the project, matching OUC's $60,000 donation.

In partnership with the City of Orlando, the P.O.W.E.R. Program targets Carver Shores' homeowners and entails an extensive scope of work. Working with a City crew, the homes will be evaluated not only for energy efficiency but also for health concerns like mold that often accompany home issues like leaky roofs, windows, etc. This program targets about 40 homes, including some that will receive complete upgrades involving new appliances, a new HVAC system, and other major home projects. A home could potentially be completely renovated and rehabilitated while families are moved into temporary housing during the upgrade process. OUC is rebating items related to energy efficiency to the City of Orlando.

OUC has partnered with the Orlando Science Center to deliver an interactive curriculum to Orange county public school classrooms within OUC's service territory. The Orlando Science Center, using content approved by OUC, has developed an electric and water conservation and renewable energy curriculum and designed activities that meet Sunshine State Standards and target fifth graders, who are preparing for their first Science FCAT test. The program includes two 90-minute classroom workshops for students as well as hands-on labs and pre- and post-classroom activities.

4 Forecast of Peak Demand and Energy Consumption

OUC prepares a set of sales, energy, and demand forecast models each year to support OUC's budgeting and financial planning process as well as long-term planning requirements. In preparing the forecasts OUC uses internal records, company knowledge of the service territory and customers, and economic projections. OUC draws on outside expertise as needed. The economic projection data is provided by Moody's Economy.Com and Itron provides forecasting software, analysis of end-use equipment and efficiencies, and technical expertise.

3.7 FORECAST METHODOLOGY

OUC has adopted a "Statistically Adjusted End-Use" (SAE) modeling technique. This approach entails specifying end-use variables (xHeat for heating, xCool for cooling, and xOther for other use) and utilizing these variables in sales multi-regression models. SAE variables allow anticipated shifts in customer end use consumption driven by the type and efficiency of heating and cooling equipment, appliances, and other load devices to be represented along with econometric drivers in the forecast models. The SAE approach was developed by Itron. Itron reviews OUC's application of these techniques and provides data on heating, cooling, and other end-use load trends. These techniques are used to develop the forecasts for both the OUC and St. Cloud service territories.

3.7.1 Residential

The residential model consists of both a customer forecast model and an average use per customer model. Monthly average use models were estimated using actual data for the period 2004 to 2013. This provides 10-years of historical data and enough observations to estimate strong regression models. Once models showing the number of expected customers and the expected average use per customer are developed, the projected residential sales by year (y) and month (m) are calculated as the product of the customer and average use forecasts:

$$Residential\ Sales_{y,m} = Customers_{y,m} \times Average\ Usage_{y,m}$$

3.7.1.1 Residential Customer Forecast

Residential customers are forecast as a function of household growth for the Orlando SMSA. There is a strong correlation (R^2 greater than 0.98) between historical changes in customers and historical changes in the Orlando SMSA household growth. The multi-regression model for residential customers is represented as:

$$Customers_{y,m} = \beta_0 + \beta_1\left(Households_{y,m}\right)$$

The coefficients (β) are outputs of the multi-regression models

3.7.1.2 Average Use Forecast

The residential forecast models utilize multi-regression modeling made up of three major components:

1. Changes in the economy, such as median household income, household size, and the price of electricity
2. End-use equipment index variables, which captures the long-term net effect of equipment saturation and equipment efficiency improvements
3. Weather variables, which serve to allocate the seasonal impacts of weather throughout the year.

The SAE model framework begins by defining energy use for an average customer in year (y) and month (m) as the sum of energy used by heating equipment (xHeat $_{y, m}$), cooling equipment (xCool $_{y, m}$), and other equipment (xOther $_{y, m}$). The xHeat, xCool and xOther variables are defined as a product of an annual equipment index and a monthly usage multiplier. This model is represented as:

$$Average\ Usage_{y,m} = \beta_1(xHeat_{y,m}) + \beta_2(xCool_{y,m}) + \beta_3(xOther_{y,m})$$

Where:
$xHeat_{y,m} = Economics_{y,m} \times HeatingEqup_y \times HDD\_Index_{y,m}$
$xCool_{y,m} = Economics_{y,m} \times CoolingEqup_y \times CDD\_Index_{y,m}$
$xOther_{y,m} = Economics_{y,m} \times OtherEqup_{y,m}$

A customer's monthly usage level is impacted by several economic factors, including the price of electricity, household size, and income levels.

$$Economics_{y,m} = \left(\frac{Price_{y,m}}{Price_{base\ y}}\right)^{-0.1} \times \left(\frac{HH\ Size_{y,m}}{HH\ Size_{base\ y,m}}\right)^{0.2} \times \left(\frac{HH\ Income_{y,m}}{HH\ Income_{base\ y,m}}\right)^{0.2}$$

The annual equipment variables (HeatEquip, CoolEquip, OtherEquip) are defined as a weighted average across equipment types multiplied by equipment saturation levels normalized by operating efficiency levels.

$$HeatEquip_y = \sum_{tech} Weight \times \left(\frac{Saturation_y / Efficieny_y}{Saturation_{base\ y} / Efficieny_{base\ y}}\right)$$

$$CoolEquip_y = \sum_{tech} Weight \times \left(\frac{Saturation_y / Efficieny_y}{Saturation_{base\ y} / Efficieny_{base\ y}}\right)$$

$$OtherEquip_y = \sum_{tech} Weight \times \left(\frac{Saturation_y / Efficieny_y}{Saturation_{base\ y} / Efficieny_{base\ y}}\right)$$

The following degree day index variables serve to allocate the seasonal impacts of weather throughout the year. For historic periods actual HDD's and CDD's are used. Normal HDD's and CDD's are used for forecast periods.

$$HDD\_Index_{y,m} = \frac{HDD_{y,m}}{Normal\ HDD_y}$$

$$CDD\_Index_{y,m} = \frac{CDD_{y,m}}{Normal\ CDD_y}$$

3.7.2 Non-Residential

3.7.2.1 General Service Non-Demand (GSND)

The General Service Non-Demand (GSND) and General Service Demand Secondary (GSD Secondary) classes are modeled as a combined General Service Secondary class (GS Secondary) using a single model because the historic data indicates customer migration has occurred back and forth between the two classes. The result is a single model which produces predicted values with a higher

correlation than that of two separate models. The forecast is later split between GSND and GSD Secondary using the monthly relationships between the two classes in 2013.

The framework for the GS secondary class model is similar to the residential model. It also has three major components and utilizes the SAE model framework. The differences lie in modeling total sales versus use per customer, the type of end-use equipment, and the economic variables used. The end-use equipment variables are based on commercial appliance / equipment saturation and efficiency projections. The economic drivers in the model are the commercial price of electricity and the Gross Metro Product for the Orlando SMSA. The third component is the weather variable. HDD is not used in the GS Secondary model because no statistically valid correlation between heating days and sales could be identified. The GS Secondary class model uses CDD as the weather variable. The growth in residential customers is brought into the GS secondary model because growth in the residential sector is seen as a driver for the commercial sector.

The GS Secondary model is represented as:

$$GS\ Secondary\ Sales_{y,m} = \beta_0 + \beta_1(xCool_{y,m}) + \beta_2(xOther_{y,m}) + \beta_3(ResCust_{y,m})$$

Sales to six large GSD Secondary customers are excluded from the GS Secondary model discussed above. These six large customers are forecast individually using a combination of SAE techniques, individual customer trending, and customer specific planning input. These six customers represent approximately 5% of OUC's total load and 9% of the GS Secondary Load. They are handled individually because each has identifiable growth plans or patterns and each individually represents a significant load.

3.7.2.2 General Service Demand (GSD)

Forecasted sales to GSD Secondary customers were modeled as discussed above. In addition to the customers taking service at secondary voltage, OUC serves eighteen locations at primary voltage. Of those eighteen, thirteen are modeled as a group because they have exhibited a consistent load pattern over time. Collectively their load is forecast using an exponential smoothing model which incorporates the seasonality of their load. This group of customers represents about 18% of the GSD Primary sales.

The five remaining primary customers are forecast individually using a combination of techniques which includes regression modeling, individual customer trending, and customer specific planning input. These five customers represent approximately 7% of OUC's total load and 82% of the GSD Primary sales.

Sales from the various GSD models are summed to complete the GSD forecast.

$$GSD\ Sales_{y,m} = GSD\ Secondary\ Sales_{y,m} + GSD\ Primary\ Sales_{y,m}$$

3.7.2.3 Streetlights

Private and Public lighting consumption is forecast separately. Both classes are not impacted by the weather, and the SAE modeling approach does not apply. Therefore, simple exponential smoothing models with a linear trend are used to generate both forecasts. The forecast for public streetlights reflects the planned schedule for replacement of traditional HPS fixtures with LED fixtures.

3.7.2.4 OUC Use

OUC Use sales are those to OUC Water Plants, OUCooling Plants, and OUC facilities. The OUC Use models utilize CDD, but not HDD or the factors included in the "Other" SAE modeling variable. Binary variables have been inserted in the multi-regression model coinciding with operations date for the three OUC Cooling Plants commissioned in the past 10-years.

$$\text{Sales}_{y,m} = \beta_0 + \beta_1(\text{xCool}_{y,m}) + \beta_2(\text{Jun\_2005\_Plus}_{y,m}) + \beta_3(\text{Jun\_2008\_Plus}_{y,m}) + \beta_4(\text{Jun\_2010\_Plus}_{y,m})$$

3.7.3 Hourly Load and Peak Forecast

The monthly net energy for load (NEL) is estimated for OUC and St. Cloud based on the respective sales forecasts described above and the expected line loss factors. The system 8,760 hourly load forecast is generated using the software package *MetrixLT*. Within MetrixLT the monthly NEL forecast is allocated to each hour based on the weather normal hourly energy profile. The hourly load forecasts for OUC and St. Cloud are then combined to generate a total system hourly load forecast. Summer and winter peak demands are then extracted from the combined total system hourly load forecast.

3.8 BASE CASE FORECAST ASSUMPTIONS

Incorporated into the forecast models are set of underlying economic and demographic, price of electricity, and weather assumptions.

3.8.1 Economics & Demographics

The economic and demographic assumptions are derived from forecasts for the Orlando SMSA by Economy.Com.

3.8.1.1 Median Household Income

The residential forecast model uses the Median Household Income which is forecast to grow at an average annual rate of 2.2% over the ten-year period 2014-2025 as shown inTable 4-1.

3.8.1.2 Gross Metro Product

The non-residential forecast models use Orlando SMSA Gross Metro Product. The Gross Metro Product for the Orlando SMSA is forecast to grow at an average annual rate of 2.6% over the ten-year period 2014 - 2024. Gross Metro Product is shown in Table 4-1.

Table 4-1 Economic & Demographic Projections – Orlando SMSA

YEAR	MEDIAN HOUSEHOLD INCOME	GROSS METRO PRODUCT $ BILLIONS	HOUSEHOLDS (THOUSANDS)	POPULATION (THOUSANDS)
2014	$49,857	100.1	858.8	2,322.2
2015	$56,326	115.2	995.2	2,649.1
2024	$62,172	129.0	1,140.1	3,004.0
2029	$68,985	142.6	1,285. 2	3,355.1
Average Annual Increase				
14-19	2.5%	2.8%	3.0%	2.7%
14-24	2.2%	2.6%	2.9%	2.6%
24-29	1.0%	1.0%	1.2%	1.1%

3.8.1.3 Households and Population

The primary demographic drivers in the residential forecast model are the number of households and the population (see Table 4-1). Households are used in the residential customer forecast model. The population data is divided by the household data to determine household size used in the residential average use forecast model.

3.8.2 Price of Electricity

The nominal price of electricity by customer class is forecast to increase at the same rate as inflation resulting in essentially no change to the real price of electricity. The real price of electricity by customer class is used in the residential and non-residential forecast models.

3.8.3 Weather

Weather is a key factor affecting electricity consumption for indoor cooling and heating. Monthly cooling degree days (CDDs) are used to capture cooling requirements while heating degree days (HDDs) account for variation in usage because of electric heating needs. CDDs and HDDs are calculated from the daily average temperatures as reported by the National Weather Service for the weather station at the Orlando International Airport. CDD is calculated using a 65° F base temperature as follows:

$$CDD_d = (Avg\ Temp_d - 65°\ F)\ when\ Avg\ Temp_d \geq 65$$

The daily CDD values are then aggregated to yield a monthly CDD for each year as follows:

$$CDD_{y,m} = \sum CDD_{y,m,d}$$

Heating degree days are calculated in a similar manner use a base temperature of 65° F as follows:

$$HDD_d = (65°\ F - Avg\ Temp_d)\ when\ Avg\ Temp_d \leq 65$$

The daily HDD values are then aggregated to yield a monthly HDD for each year as follows:

$$HDD_{y,m} = \sum HDD_{y,m,d}$$

"Normal" monthly weather is assumed to be the median of the monthly degree days during the most recent 30-year period (1984 – 2013).

3.9 BASE CASE LOAD FORECAST

A long-term annual budget forecast was developed through 2029 using the methodology and base case assumptions outlined above.

3.9.1 Customer and Sales Forecast Results

Total retail sales for OUC are expected to increase from 5,502 GWh in calendar year 2013 to 6,615 GWh by 2024. St. Cloud sales are projected to increase from 551 GWh to 703 GWh over this same time period. Shown in Table 4-2 through Table 4-5 are the annual customer and sales forecasts for OUC and St. Cloud.

3.9.1.1 Residential Forecast

With increasing appliance efficiency, increased customer conservation, and declining household size average use per residential customer is projected to decline over the forecast period. The number of residential customers is expected to increase at an average annual rate of 2.1 percent for OUC and at 2.9 percent for St. Cloud for the next ten years. The ten-year residential sales average annual growth rate is 1.9 percent for OUC and 2.7 percent for St. Cloud.

3.9.1.2 GSND Forecast

GSND sales are projected to grow at an average annual rate of 1.7 percent and 1.5 percent for OUC and St. Cloud, respectively, between 2014 and 2024. The number of GSND customers is projected to grow at an average annual growth rate of 2.4 percent and 2.9 percent respectively, for OUC and St. Cloud from 2014 through 2024.

3.9.1.3 GSD Forecast

GSD is comprised of large commercial and industrial customers. Sales are projected to show solid gains as a result of new major commercial development such as the UCF medical school, Burnham Institute, VA hospital, and other related medical businesses coming on line.

Table 4-2 OUC Long-Term Sales Forecast (GWh)

YEAR	RESIDENTIAL	GSND	GSD	LIGHTING	OUC USE	TOTAL RETAIL
2014	1,790	305	3,293	128	56	5,571
2019	1,955	332	3,670	128	45	6,130
2024	2,156	361	3,922	128	47	6,615
2029	2,384	390	4,180	129	49	7,133
Average Annual Increase						
14-19	1.8%	1.7%	2.2%	0.0%	-4.2%	1.9%
14-24	1.9%	1.7%	1.8%	0.0%	-1.6%	1.7%
14-29	1.9%	1.7%	1.6%	0.0%	-0.8%	1.7%

Table 4-3 OUC Average Number of Customers Forecast

YEAR	RESIDENTIAL	GSND	GSD	TOTAL RETAIL
2014	160,312	20,448	5,442	186,202
2019	178,317	23,047	6,131	207,496
2024	197,599	25,830	6,869	230,298
2029	216,897	28,616	7,607	253,120
Average Annual Increase				
14-19	2.2%	2.4%	2.4%	2.2%
14-24	2.1%	2.4%	2.4%	2.1%
14-29	2.0%	2.3%	2.3%	2.1%

Table 4-4 St. Cloud Long-Term Sales Forecast (GWh)

YEAR	RESIDENTIAL	GSND	GSD	LIGHTING	TOTAL RETAIL
2014	394	43	117	2	557
2019	449	47	127	2	626
2024	514	50	137	2	703
2029	585	54	146	2	787
Average Annual Increase					
14-19	2.7%	1.6%	1.6%	0.0%	2.4%
14-24	2.7%	1.5%	1.5%	0.0%	2.4%
14-29	2.7%	1.5%	1.5%	0.0%	2.3%

Table 4-5 St. Cloud Average Number of Customers Forecast

YEAR	RESIDENTIAL	GSND	GSD	TOTAL RETAIL
2014	28,891	2,501	369	31,761
2019	33,480	2,898	425	36,803
2024	38,355	3,320	476	42,151
2029	43,236	3,743	526	47,504
Average Annual Increase				
14-19	3.0%	3.0%	2.8%	3.0%
14-24	2.9%	2.9%	2.6%	2.9%
14-29	2.7%	2.7%	2.4 %	2.7%

3.9.2 Forecast Net Peak Demand and Net Energy for Load

Underlying hourly load growth is driven by the aggregate energy forecast. Thus, forecasted peaks grow at roughly the same rate as the energy forecast. Shown in Table 4-6 through Table 4-8 are the seasonal peak demand and net energy for load forecasts for OUC, St. Cloud, and the net system peak.

Table 4-6 OUC Forecast Net Peak Demand (Summer and Winter) and Net Energy for Load

YEAR	SUMMER (MW)	WINTER (MW)	NET ENERGY (GWH)
2014	1,098	1,019	5,810
2019	1,209	1,119	6,382
2024	1,305	1,215	6,886
2029	1,414	1,309	7,425
Average Annual Increase			
14-19	1.9%	1.9%	1.9%
14-24	1.7%	1.8%	1.7%
14-29	1.7%	1.7%	1.6%

Table 4-7 St. Cloud Forecast Net Peak Demand (Summer and Winter) and Net Energy for Load

YEAR	SUMMER (MW)	WINTER (MW)	NET ENERGY (GWH)
2014	147	143	590
2019	165	161	663
2024	186	180	745
2029	208	200	835
Average Annual Increase			
14-19	2.4%	2.3%	2.4%
14-24	2.4%	2.3%	2.4%
14-29	2.3%	2.3%	2.3%

Table 4-8 Net System Peak (Summer and Winter) and Net Energy for Load (Total of OUC and St. Cloud)

YEAR	SUMMER (MW)	WINTER (MW)	NET ENERGY (GWH)
2014	1,244	1,155	6,401
2019	1,373	1,280	7,045
2024	1,490	1,395	7,631
2029	1,621	1,510	8,260
Average Annual Increase			
14-19	2.0%	2.1%	1.9%
14-24	1.8%	1.9%	1.8%
14-29	1.8%	1.8%	1.8%

3.10 HIGH AND LOW LOAD SCENARIOS

In addition to the base case, two long-term forecast scenarios representing a high range and low range around the peak demand forecast were constructed. The high and low forecast scenarios are based on bands around the most likely household forecast for the Orlando SMSA. The average annual household growth rate in the base case is 2.8 percent for the period 2014 - 2024. In the high case scenario, households are forecasted to increase at 3.8 percent annually for the same time period. The high growth scenario results in a forecasted average annual energy growth rate of 2.4 percent, with a system peak demand that is 209 MW higher than the base case in 2029. In the low case scenario, the households are forecasted to increase at 1.8 percent annually resulting in annual energy increases of 1.1 percent. The low case peak demand is 133 MW lower than the base case in 2029. Table 4-9 presents a summary of the high, base, and low load scenarios.

Table 4-9 Scenario Peak Forecasts OUC and St. Cloud

HIGH LOAD SCENARIO			
Year	Summer (MW)	Winter (MW)	Net Energy (GWh)
2014	1,269	1,178	6,530
2019	1,422	1,325	7,294
2024	1,604	1,502	8,215
2029	1,830	1,705	9,325
Average Annual Increase			
14-19	2.3%	2.4%	2.2%
14-24	2.4%	2.5%	2.4%
14-29	2.5%	2.5%	2.4%
LOW LOAD SCENARIO			
2014	1,255	1,165	6,458
2019	1,325	1,235	6,799
2024	1,400	1,311	7,172
2029	1,488	1,386	7,580
Average Annual Increase			
14-19	1.1%	1.2%	1.0%
14-24	1.1%	1.2%	1.1%
14-29	1.1%	1.2%	1.1%

4 Demand-Side Management

Sections 366.80 through 366.85, and 403.519, Florida Statutes (F.S.), are known collectively as the Florida Energy Efficiency and Conservation Act (FEECA). Section 366.82(2), F.S., requires the Florida Public Service Commission (PSC) to adopt appropriate goals designed to increase the conservation of expensive resources, such as petroleum fuels, to reduce and control the growth rates of electric consumption and weather-sensitive peak demand. Pursuant to Section 366.82(6), F.S., the PSC must review the conservation goals of each utility subject to FEECA at least every five years. The seven utilities subject to FEECA are Florida Power & Light Company (FPL), Duke Energy Florida, Inc. (DEF), Tampa Electric Company (TECO), Gulf Power Company (Gulf), Florida Public Utilities Company (FPUC), Orlando Utilities Commission (OUC), and JEA (referred to collectively as the FEECA utilities). Goals were established for the FEECA utilities in August 2004 (Docket Nos. 040029-EG through 040035-EG). OUC's 2005 Demand-Side Management (DSM) Plan was approved by the Florida Public Service Commission (FPSC) on September 1, 2004 (Docket No. 040035-EG). The FPSC determined that there were no cost-effective conservation measures available for use by OUC, and therefore established zero DSM and conservation goals for OUC's residential, commercial, and industrial sectors through 2014. Although OUC's FPSC-approved DSM and conservation goals were zero for the 2005 through 2014 period, OUC recognized the importance of energy efficiency and conservation and voluntarily maintained and continued to offer DSM programs that showed potential for high customer demand and participation.

Given that five years had elapsed since the FPSC's August 2004 FEECA dockets, goals for the 2010 through 2019 period were required to be established by January 2010. OUC's residential and commercial/industrial numeric conservation goals for the 2010 through 2019 period were established by the FPSC in the *Final Order Approving Numeric Conservation Goals* (Order No. PSC-09-0855-FOF-EG, issued December 30, 2009). On March 30, 2010, OUC filed a petition requesting FPSC approval of OUC's DSM Plan, which was subsequently approved pursuant to the FPSC Order issued September 3, 2010 (Order No. PSC-10-0554-PAA-EG), with Consummating Order issued September 28, 2010 (Order No. PSC-10-0595-CO-EG). OUC's DSM Plan set forth the programs that OUC anticipated offering to achieve the numeric conservation goals established by the FPSC. These FPSC-established annual goals are presented in Tables 5-1, 5-2 and 5-3.

Table 4-1 Residential DSM Goals Approved by the FPSC

CALENDAR YEAR	SUMMER (MW)	WINTER (MW)	ANNUAL (GWH)
2010	0.50	0.20	1.80
2011	0.50	0.20	1.80
2012	0.50	0.20	1.80
2013	0.50	0.20	1.80
2014	0.50	0.20	1.80
2015	0.50	0.20	1.80
2016	0.50	0.20	1.80
2017	0.50	0.20	1.80
2018	0.50	0.20	1.80
2019	0.50	0.20	1.80
Total	**5.00**	**2.00**	**18.00**

Table 4-2 Commercial/Industrial DSM Goals Approved by the FPSC

CALENDAR YEAR	SUMMER (MW)	WINTER (MW)	ANNUAL (GWH)
2010	0.70	0.70	1.80
2011	0.70	0.70	1.80
2012	0.70	0.70	1.80
2013	0.70	0.70	1.80
2014	0.70	0.70	1.80
2015	0.70	0.70	1.80
2016	0.70	0.70	1.80
2017	0.70	0.70	1.80
2018	0.70	0.70	1.80
2019	0.70	0.70	1.80
Total	**7.00**	**7.00**	**18.00**

Table 4-3 Total Residential and Commercial/Industrial DSM Goals Approved by the FPSC

CALENDAR YEAR	SUMMER (MW)	WINTER (MW)	ANNUAL (GWH)
2010	1.20	0.90	3.60
2011	1.20	0.90	3.60
2012	1.20	0.90	3.60
2013	1.20	0.90	3.60
2014	1.20	0.90	3.60
2015	1.20	0.90	3.60
2016	1.20	0.90	3.60
2017	1.20	0.90	3.60
2018	1.20	0.90	3.60
2019	1.20	0.90	3.60
Total	**12.00**	**9.00**	**36.00**

OUC has been increasingly emphasizing its DSM and conservation programs to increase customer awareness of such programs. This is beneficial to the customers, and also represents one way in which OUC is helping to reduce its emissions of greenhouse gases, better positioning OUC to meet possible future climate regulations.

It should be noted that government mandates have forced manufacturers to increase their efficiency standards, thereby decreasing the incremental amount of energy savings achievable. In addition, the efficiency of new generation has increased. These appliance and generating unit efficiency improvements have to some degree mitigated the effectiveness of DSM and conservation programs, as the incremental benefit of such programs is partially offset by overall efficiency increases in the marketplace as a whole.

The quantifiable DSM and conservation programs offered to OUC's customers in 2012, and planned to be offered during 2013, include the following:

- Residential Energy Survey Program (Walk-Through, DVD, and Online)

- Residential Duct Repair Rebate Program
- Residential Ceiling Insulation Rebate Program
- Residential Window Film/Solar Screen Rebate Program
- Residential High Performance Window Rebate Program
- Residential Wall Insulation Rebate Program
- Residential Cool/Reflective Roof Rebate Program
- Residential Heat Pump Rebate Program
- Residential Efficiency Delivered Program
- Residential Billed Solution Insulation Program
- Residential New Home Rebate Program
- Residential Compact Fluorescent Lighting Program
- Residential AC Proper Sizing with R-30 Attic Insulation Rebate Program
- Commercial Energy Audit Program
- Commercial Indoor Lighting Retrofit Billed Solution Program
- Commercial Indoor Lighting Retrofit Rebate Program
- Commercial Heat Pump Rebate Program
- Commercial Duct Repair Rebate Program
- Commercial Window Film/Solar Screen Program
- Commercial Ceiling Insulation Program
- Commercial Cool/Reflective Roof Program

During calendar year 2013, OUC offered the following non-quantified measures that aid OUC's customers in reliability, energy conservation, and education:

- Residential Energy Conservation Rate Structure
- Commercial OUConsumption Online
- Commercial OUConvenient Lighting
- OUCooling
- Small Business Efficiency Pilot
- Residential Floor Insulation
- Energy Star Washing Machine
- Solar Water Heating
- Heat Pump Water Heating
- Commercial Custom Incentive Program
- Community Solar Farm

The remainder of this section describes each of the quantifiable and non-quantifiable DSM and conservation programs that OUC currently plans to offer to its customers to meet the FPSC-approved DSM goals. In addition to offering such programs, OUC continues to play an active role in promoting conservation through community relations as discussed in Section 2.4 and Section 3.6 of this Ten-Year Site Plan.

4.1 QUANTIFIABLE CONSERVATION PROGRAMS

4.1.1 Residential Energy Survey Program

OUC has been offering home energy surveys dating back to the late 1970's. The home energy walk-through surveys were designed to provide residential customers with recommended energy efficiency measures and practices customers can implement. The Residential Energy Survey Program consists of three measures: the Residential Energy Walk-Through Survey, the Residential Energy Survey DVD, and an interactive Online Energy Survey. These measures are available to both single family and multi-family residential customers.

The Residential Energy Walk-Through Survey includes a complete examination of the attic; heating, ventilation, and air conditioning (HVAC) system; air duct and air returns; window caulking; weather stripping around doors; faucets and toilets; and lawn sprinkler systems. OUC provides participating customers specific tips on conserving electricity and water as well as details on customer rebate programs. OUC Conservation Specialists are using this walk-through type audit as a means of motivating OUC customers to participate in other conservation programs and qualify for appropriate rebates.

A Residential Energy Survey Video was first offered in 2000 by OUC and is now available to OUC customers in an interactive DVD format. The DVD is free and is distributed in English and Spanish to OUC customers by request. The DVD was developed to further assist OUC customers in surveying their homes for potential energy saving opportunities. The DVD walks the customer through a complete visual assessment of energy and water efficiency in his or her home. A checklist brochure to guide the customer through the audit accompanies the DVD. The DVD has several benefits over the walk-through survey, including the convenience of viewing the DVD at any time without a scheduled appointment and the ability to watch the DVD numerous times. In addition to the Energy Walk-Through and the DVD Surveys, OUC offers customers an interactive Online Home Energy Audit. The interactive Online Home Energy Audit is available on OUC's web sites, *http://www.OUC.com* and *http://www.ReliablyGreen.com*.

One of the primary benefits of the Residential Energy Survey Program is the education it provides to customers on energy conservation measures and ways their lifestyle can directly affect their energy use. Customers participating in the Energy Survey Program are informed about conservation measures that they can implement. Customers will benefit from the increased efficiency in their homes, and decreased electric and water bills.

Participation in the Walk-Through Energy Survey has been consistently strong over the past several years and interest in the Energy Survey DVD, as well as the interactive Online Home Energy Audit, has been high since the measures were first introduced. Feedback from customers who have taken advantage of the surveys has been very positive.

OUC customers can participate in this program by requesting an appointment for a Walk-Through Energy Survey by calling the OUC Customer Service Call Center or requesting an Energy Survey DVD. OUC customers can also use the Online Home Energy Audit at their convenience by visiting OUC's websites. Participation is tracked through service orders that are produced when appointments are scheduled and completed or the DVD is mailed. Online Surveys are tracked through the service provider (Apogee), who produces monthly activity reports.

4.1.2 Residential Duct Repair Rebate Program

The Duct Repair Rebate Program originated in 2000 and is designed to encourage customers to repair leaking ducts on existing systems. Qualifying customers must have an existing central air conditioning system of 5.5 tons or less and ducts must be sealed with mastic and fabric tape or Underwriters Laboratory (UL) approved duct tape. Participating customers receive a rebate for 100 percent of the cost of duct repairs on their homes, up to $160.

Customers can participate by submitting a rebate application form available through OUC's Customer Service Centers or on line at *http://www.OUC.com* or *http://www.ReliablyGreen.com*. Proofs of purchase or receipts are required to be attached to the application and repairs can be performed by a contractor or the customer. Participation is tracked based on the number of rebates processed. Typically these rebates are credited on the customer's bill, or a check can be processed and sent to the property owner who may have paid for the improvement.

4.1.3 Residential Ceiling Insulation Rebate Program

The attic is the easiest place to add insulation and lower total energy costs throughout the seasons. The ceiling insulation rebate program has been offered for several years and is designed to encourage customers to upgrade their attic insulation. Participating customers receive $0.05 per square foot for upgrading their attic insulation up to R-30. If the customer arranges an OUC pre-inspection and it is verified the existing insulation is R-11 or less, OUC will pay a rebate of $0.14 per square foot.

Customers can participate by submitting a rebate application form available through OUC's Customer Service Centers or on line at *http://www.OUC.com* and *http://www.ReliablyGreen.com*. Proofs of purchase or receipts are required to be attached to the application and repairs can be performed by a contractor or the customer. Participation is tracked based on the number of rebates processed. Typically these rebates are credited on the customer's bill, or a check can be processed and sent to the property owner who may have paid for the improvement.

4.1.4 Residential Window Film/Solar Screen Rebate Program

Installing solar window film on pre-existing homes can help reflect the heat during hot summer days and help the efficiency of home cooling units. The window film/solar screen rebate program has been offered for several years and is designed to encourage customers to install solar shading on their windows. Participating customers will receive a rebate in the amount of $1 per square foot for installation of solar shading film with a shading coefficient of 0.5 or less on east-, west, and south-facing windows.

Customers can participate by submitting a rebate application form available through OUC's Customer Service Centers or on line at *http://www.OUC.com* or *http://www.ReliablyGreen.com*. Proofs of purchase or receipts are required to be attached to the application and repairs can be performed by a contractor or the customer. Participation is tracked based on the number of rebates processed. Typically these rebates are credited on the customer's bill, or a check can be processed and sent to the property owner who may have paid for the improvement.

4.1.5 Residential High Performance Window Rebate Program

Energy-efficient windows can help minimize heating, cooling, and lighting costs. The high performance windows rebate program has been offered for several years and is designed to encourage customers to install windows that improve energy efficiency in their homes. Customers will receive a $2 rebate per square foot for the purchase of ENERGY STAR® rated energy efficient windows.

Customers can participate by submitting a rebate application form available through OUC's Customer Service Centers or on line at *http://www.OUC.com* or *http://www.ReliablyGreen.com*. Proofs of purchase or receipts are required to be attached to the application and repairs can be performed by a contractor or the customer. Participation is tracked based on the number of rebates processed. Typically these rebates are credited on the customer's bill, or a check can be processed and sent to the property owner who may have paid for the improvement.

4.1.6 Residential Wall Insulation Rebate Program

Air leakage and improperly installed insulation can waste 20 percent or more of the energy used to heat and cool a house. The wall insulation rebate program is designed to encourage customers to insulate the walls of their homes. Customers will receive a rebate of $0.66 per square foot of insulation added, with the requirement that the initial insulation R-value must be increased by a minimum of R-10.

Customers can participate by submitting a rebate application form available through OUC's Customer Service Centers or on line at *http://www.OUC.com* or *http://www.ReliablyGreen.com*. Proofs of purchase or receipts are required to be attached to the application and repairs can be performed by a contractor or the customer. Participation is tracked based on the number of rebates processed. Typically these rebates are credited on the customer's bill, or a check can be processed and sent to the property owner who may have paid for the improvement.

4.1.7 Residential Cool/Reflective Roof Rebate Program

A cool/reflective roof reflects the sun's rays to help lower roof surface temperature and increase roof life. It helps lower energy bills during the summer by preventing heat absorption. The cool/reflective roof rebate program, which has been offered in the past couple of years, is designed to encourage customers to install new roofing to help insulate their homes. Customers will receive a rebate of $0.14 per square foot for ENERGY STAR® cool/reflective roofing that has an initial solar reflectance greater than or equal to 0.70.

Customers can participate by submitting a rebate application form available through OUC's Customer Service Centers or on line at *http://www.OUC.com* or *http://www.ReliablyGreen.com*. Proofs of purchase or receipts are required to be attached to the application and repairs can be performed by a contractor or the customer. Participation is tracked based on the number of rebates processed. Typically these rebates are credited on the customer's bill, or a check can be processed and sent to property owner who may have paid for the improvement.

4.1.8 Residential Heat Pump Rebate Program

The residential heat pump rebate program provides rebates to qualifying customers in existing homes who install heat pumps having a seasonal energy efficiency ratio (SEER) of 14.0 or higher. Customers will obtain a rebate in the form of a credit on their bill ranging from $20 to $1,275, depending upon the SEER rating and capacity (tons) of the new heat pump. The following table illustrates the incentives available depending on the size and efficiency of the Heat Pump installed.

HEAT PUMP SIZE	HEAT PUMP SEER AND REBATE AMOUNT				
Tons	14	15	16	17	18
1	$20	$80	$130	$175	$215
1 1/2	$55	$145	$220	$290	$350
2	$90	$205	$310	$400	$480
2 1/2	$120	$270	$400	$515	$615
3	$155	$335	$490	$625	$745
3 1/2	$190	$395	$580	$735	$880
4	$225	$460	$670	$850	$1,010
4 1/2	$260	$525	$755	$960	$1,145
5	$295	$590	$845	$1,075	$1,275

Customers can participate by submitting a rebate application form available through OUC's Customer Service Centers or on line at *http://www.OUC.com* or *http://www.ReliablyGreen.com*. Proofs of purchase or receipts are required to be attached to the application, and work must be performed by a contractor. Participation is tracked based on the number of rebates processed.

Typically these rebates are credited on the customer's bill or a check can be processed and sent to the property owner who may have paid for the improvement.

4.1.9 Residential Efficiency Delivered Program

What was once referred to as the home energy fix-up program has now been revamped and expanded to allow for any OUC customer both Energy and Water to participate and renamed as the Efficiency Delivered program. The program is available to residential customers (single family homes) and provides up to $2,000 of energy and water efficiency upgrades based on the needs of the customer's home. A Conservation Specialist from OUC performs a survey at the home and determines which home improvements have the potential of saving the customer the most money. The program is an income based program which is the basis for how much OUC will help contribute toward the cost of improvements and consists of three household income tiers: 1) $40,000 or less OUC will contribute 85 percent of the total cost, 2) $40,001 to $60,000 OUC will contribute 50 percent of the total cost, and 3) greater than $60,000 OUC will contribute the rebate incentives that apply toward the total cost. Each customer must request and complete a free Residential Energy Survey. Ordinarily, Energy Survey recommendations require a customer to spend money replacing or adding energy conservation measures: however, customers may not have the discretionary income to implement these measures especially those in the lower income tier. Under this program, OUC will arrange for a licensed, approved contractor to perform the necessary repairs based on a negotiated and contracted rate. The remaining portion of the cost the customer is responsible for, can be paid directly to OUC or over an interest-free 12-month period on the participant's monthly electric bill. To be eligible for this program, the customer's account must be in good credit standing with the exception of our low-income customers who are only required to have a current balance. Some of the improvements covered under this program include ceiling insulation, duct system repair, pipe insulation, window film, window caulk, door caulk, door weather stripping, door sweep, threshold plate, air filter replacement, toilet replacement, irrigation repairs, water flow restrictors and minor plumbing repairs.

The purpose of the program is to reduce the energy and water costs especially for low-income households, particularly those households with elderly persons, disabled persons and children. Through this program, OUC helps to lower the bills of customers who may have difficulty paying their bills, thereby decreasing the potential for costly service disconnect fees and late charges. OUC believes that this program will help customers afford other essential living expenses. For others, this program offers a one-stop-shop to facilitate the implementation of a whole suite of conservation measures at reasonable costs and pre-screened qualified contractors.

Efficiency Delivered contractor(s) are selected through a Request For Proposal (RFP) process on a routine basis. Eligible customers are referred to the participating contractor after the OUC Conservation Specialist inspection is complete. The Efficiency Delivered contractor then inspects the home and creates a proposal to install eligible measures. Once the customer accepts the proposal and signs the agreement the contractor calls the customer and schedules the work. Typically the work is completed within 45 days. Upon receipt of notice of completion and customer acceptance, payment to the contractor is processed and the customer's share of the conservation improvements is billed. Participation is tracked based on completed installations.

4.1.10 Residential Billed Solution Insulation Program

The billed solution insulation program was merged into the newly expanded Efficiency Delivered program in 2011 as described above. OUC is still providing interest free financing over 12 months through the OUC bill for any remaining costs that exist not covered by OUC's incentives, up to $2,000.

4.1.11 Residential New Home Rebate Program

Previously named The Residential Gold Ring Home Program has been transformed into a more flexible "a la carte" program offering a variety of choices for the Builder or Home buyer. This transformation was based on feedback OUC received from the residential building community in order to increase the level of participation in OUC's program. The chart below reflects an example of the incentives available. Due to the downturn in homebuilding in the past few years the demand for this program has significantly diminished.

REBATE	RATE OF REBATE	SQUARE FOOTAGE	TOTAL
Cool/Reflective Roof	$0.04 per sq. ft.	2,000	$80
Block Wall insulation	$0.16 per sq. ft.	1,100	$176
Ceiling Insulation Upgrade to R-38	$0.04 per sq. ft.	2,000	$80
Heat Pump	up to $1,275	2,000	*$460
Energy Star® Washing Machine	$100	N/A	$100
Energy Star® Heat Pump Water Heater	$650	N/A	$650
Solar Water Heater	$1000	N/A	$1,000

**Based on a typical HVAC Heat Pump size for a 2000 square foot home of 4 tons with a 15 SEER efficiency. Refer to Heat Pump rebate chart for other details.*

4.1.12 Residential Compact Fluorescent Lighting Program

OUC will give away at least one compact fluorescent lamp to customers who participate in OUC's in-home energy audit program. OUC will encourage their installation in fixtures that they use the most or at least operate four hours per day. This practice may be eliminated as incandescent lamps are curtailed from the market place due to legislation over the next few years. The loss of the energy savings will be made up through increases from other OUC programs.

4.1.13 Residential HVAC Proper Sizing with R-30 Attic Insulation Program

OUC offers this program to assist its customers in properly sizing their air conditioning (AC) units. The program combines proper sizing of AC systems along with installation of R-30 insulation. OUC will provide the customer with a $40 rebate when provided with certified sizing documentation; the rebate increases to $85 when combined with participation in another OUC program such as the Heat Pump, Block Wall Insulation, Ceiling Insulation Upgrade, Floor Insulation Upgrade, or Duct Repair/Replacement programs.

4.1.14 Commercial Energy Audit Program

The commercial/industrial energy audit program has been offered for several years and is focused on increasing the energy efficiency and energy conservation of commercial buildings and includes a free survey comprised of a physical walk-through inspection of the commercial facility performed by highly trained and experienced energy experts. The survey will examine heating and air conditioning systems including duct work, refrigeration equipment, lighting, water heating, motors, process equipment, and the thermal characteristics of the building including insulation. Following the inspection the customer receives a written report detailing cost-effective recommendations to make the facility more energy and water efficient. Participating customers are encouraged to participate in other OUC commercial programs and directly benefit from energy conservation, which decreases their electric and water bills.

OUC customers can participate by calling the OUC Customer Service Call Center and requesting an appointment for a Walk-Through Energy. Participation is tracked through service orders that are produced when appointments are scheduled and completed.

4.1.15 Commercial Indoor Lighting Retrofit Program

The indoor lighting retrofit program has been offered for several years and reduces energy consumption for the commercial customer through the replacement of older fluorescent and incandescent lighting with newer, more efficient lighting technologies. A special alliance between OUC and the lighting contractor enables OUC to offer the customer a discounted project cost. An additional feature of the program is a "cash-flow neutral billing solution" that allows the customer to pay for the retrofit through the monthly savings that the project generates. This removes the major participation barrier of lacking the upfront capital funding normally required to implement an impactful conservation measure. The project payment appears on the participating customer's utility bill as a line-item and is typically offset by the energy savings. The Term is set to be equal to the pay-back period of the project. After the project has been completely paid for, the participating customer's utility bill will decrease by the energy cost savings.

Lighting contractor(s) are selected through an RFP process. Eligible customers are referred to the lighting contractor typically after an energy survey or through other contacts generated by OUC's Account Representatives. The Lighting contractor inspects the facility and creates a proposal to install eligible measures. Once the customer accepts the proposal and signs the payment agreement, the work is scheduled and completed. Upon receipt of notice of completion, customer acceptance and an OUC inspection, payment to the contractor is processed, and the customer is billed through their OUC bill based on the terms of the payment agreement. Participation is tracked based on completed installations.

As contemplated in OUC's FPSC-approved DSM Plan, OUC has expanded its Indoor Lighting retrofit program by offering the option of receiving a $150/kW rebate instead of the billed solution mentioned above. This expansion provides more options to encourage participation.

4.1.16 Commercial Heat Pump Rebate Program

The commercial heat pump rebate program provides rebates to qualifying customers in existing buildings who install heat pumps having a seasonal energy efficiency ratio (SEER) of 14.0 or higher. Customers will obtain a rebate in the form of a credit on their bill ranging from $20 to $1,275, depending upon the SEER rating and capacity (tons) of the new heat pump. The following table illustrates the incentives available depending on the size and efficiency of the Heat Pump installed.

HEAT PUMP SIZE	HEAT PUMP SEER AND REBATE AMOUNT				
Tons	14	15	16	17	18
1	$20	$80	$130	$175	$215
1 1/2	$55	$145	$220	$290	$350
2	$90	$205	$310	$400	$480
2 1/2	$120	$270	$400	$515	$615
3	$155	$335	$490	$625	$745
3 1/2	$190	$395	$580	$735	$880
4	$225	$460	$670	$850	$1,010
4 1/2	$260	$525	$755	$960	$1,145
5	$295	$590	$845	$1,075	$1,275

Customers can participate by submitting a rebate application form available through OUC's Customer Service Centers or on line at *http://www.OUC.com* or *http://www.ReliablyGreen.com*. Proofs of purchase or receipts are required to be attached to the application and repairs can be performed by a contractor. Participation is tracked based on the number of rebates processed. Typically these rebates are credited on the customer's bill, or a check can be processed and sent to the property owner who may have paid for the improvement.

4.1.17 Commercial Duct Repair Rebate Program

The duct repair rebate program started in 2009. OUC will rebate 100 percent of cost, up to $160. Qualifying customers must have an existing central air conditioning system of 5.5 tons or less and ducts must be sealed with mastic and fabric tape or Underwriters Laboratory (UL) approved duct tape.

Customers can participate by submitting a rebate application form available through OUC's Customer Service Centers or on line at *http://www.OUC.com* or *http://www.ReliablyGreen.com*. Proofs of purchase or receipts are required to be attached to the application and repairs can be performed by a contractor. Participation is tracked based on the number of rebates processed. Typically these rebates are credited on the customer's bill, or a check can be processed and sent to the property owner who may have paid for the improvement.

4.1.18 Commercial Window Film/Solar Screen Rebate Program

The window film/solar screen rebate program started in 2009 and is designed to help reflect the heat during hot summer days and retain heat on cool winter days. OUC will rebate customers $1 per square foot for window tinting and solar screening with a shading coefficient of 0.5 or less.

Customers can participate by submitting a rebate application form available through OUC's Customer Service Centers or on line at *http://www.OUC.com* or *http://www.ReliablyGreen.com*. Proofs of purchase or receipts are required to be attached to the application and repairs can be performed by a contractor. Participation is tracked based on the number of rebates processed. Typically these rebates are credited on the customer's bill, or a check can be processed and sent to the property owner who may have paid for the improvement.

4.1.19 Commercial Ceiling Insulation Rebate Program

The ceiling insulation rebate program started in 2009 and was designed to increase a building's resistance to heat loss and gain. Participating customers receive $0.05 per square foot, for upgrading their attic insulation up to R-30. If the customer arranges an OUC pre-inspection and it is verified the existing insulation is R-11 or less, OUC will pay a rebate of $0.14 per square foot.

Customers can participate by submitting a rebate application form available through OUC's Customer Service Centers or on line at *http://www.OUC.com* or *http://www.ReliablyGreen.com*. Proofs of purchase or receipts are required to be attached to the application and repairs can be performed by a contractor. Participation is tracked based on the number of rebates processed. Typically these rebates are credited on the customer's bill, or a check can be processed and sent to the property owner who may have paid for the improvement.

4.1.20 Commercial Cool/Reflective Roof Rebate Program

The cool/reflective roofs rebate program started in 2009 and was designed to reflect the sun's rays and lower roof surface temperature while increasing the lifespan of the roof. OUC will rebate customers at $0.14 per square foot for ENERGY STAR® cool/reflective roofing that has an initial solar reflectance greater than or equal to 0.70.

Customers can participate by submitting a rebate application form available through OUC's Customer Service Centers or on line at *http://www.OUC.com or http://www.ReliablyGreen.com*. Proofs of purchase or receipts are required to be attached to the application and repairs can be performed by a contractor. Participation is tracked based on the number of rebates processed. Typically these rebates are credited on the customer's bill, or a check can be processed and sent to the property owner who may have paid for the improvement.

4.2 ADDITIONAL CONSERVATION MEASURES

The following measures are offered by OUC to its customers, resulting in energy savings and increased reliability. Although the measures were not included in OUC's DSM Plan, they are initiatives OUC's local board of Commissioners has elected to offer that provide additional benefits to OUC's customers.

4.2.1 Residential Energy Conservation Rate Structure

Beginning in October 2002, OUC modified its residential rate structure to a two-tiered block structure to encourage energy conservation. Residential customers using more than 1,000 kWh per month pay a higher rate for the additional energy usage. The purpose of this rate structure is to make OUC customers more energy-conscientious and to encourage conservation of energy resources.

4.2.2 Commercial OUConsumption Online

OUConsumption enables businesses to check their energy usage and demand from a desktop computer and manage their energy load. Customers are able to analyze the metered interval load data for multiple locations, compare energy usage among facilities, and measure the effectiveness of various energy efficiency efforts. The data can also be downloaded for further analysis. Participants must cover a one-time set-up fee of $45, a $45 monthly fee per meter, up to $500 for a load profiling meter and the cost of additional infrastructure to provide connectivity to the meter.

4.2.3 Commercial OUConvenient Lighting

OUConvenient Lighting provides complete outdoor lighting services for commercial applications, including industrial parks, sports complexes, and residential developments. Each lighting package is customized for each participant, allowing the participant to choose among light fixtures and poles. OUC handles all of the upfront financial costs and maintenance. The participant then pays a low monthly fee for each fixture. OUC also retrofits existing fixtures to new light sources or higher output units, increasing efficiency as well as providing preventive and corrective maintenance. New interlocal agreements have allowed this OUConvenient Lighting to expand into neighboring communities like Clermont, Oviedo, and Brevard County.

4.2.4 OUCooling

Originally formed in 1997 as a partnership between OUC and Trigen-Cinergy Solutions, OUCooling helps to lower air conditioning-related electric charges and reduce capital and operating costs. During 2004, OUC bought Trigen-Cinergy's rights and is now the sole owner of OUCooling. OUCooling will fund, install, and maintain a central chiller plant for each business district participating in the program. The main benefits to the businesses are lower electric energy consumption, increased reliability, and the elimination of the environmental risks associated with the handling of chemicals. Other benefits for the businesses include avoided initial capital cost, lower maintenance costs, a smaller mechanical room (therefore more rental space), no insurance requirements, improved property resale value, and availability of maintenance personnel for other duties.

OUC currently has five chilled water districts: downtown Orlando, the Mall at Millenia, the Starwood Resort, Lake Nona, and the Orange County Convention Center including Lockheed Martin and neighboring hotels. OUC envisions building other chiller plants to serve commercial campuses, hotels, retail shopping centers, and tourist attractions. OUC recently added its fifth district at Lake Nona, with the potential to provide up to 50,000 tons of chilled water to the medical complexes and research facilities located in the area. At full build out, this central chilled water system may be one of the largest in the US. In addition, a 17.6 million gallon chilled water thermal storage tank serving the Orange County Convention Center among other facilities and hotels, is one of the largest in the world. The tank works in tandem with 18 water cooled chillers and feeds a chilled water loop that can handle more than 33,000 gallons of 37º F water per minute.

4.2.5 Small Business Efficiency Pilot

OUC's Small Business Efficiency Program shows small business owners how to reduce energy and water consumption and improve overall business operations. The pilot focuses on providing essential services to entrepreneurial and small businesses, which include how to write a business plan, how to write contracts, proper accounting methods and other information necessary for a new business to succeed. After completion, small businesses receive a $250 credit on their utility bill.

For participation, customers are required to complete a Commercial Energy Survey or have had one completed in the past 12 months, fill an application form (downloadable from *http://www.OUC.com*), and attend a one-hour counseling session at the University of Central Florida's Small Business Development Center (SBDC). Validation of the application form by the SBDC is necessary before turning it in to OUC for credit processing.

4.2.6 Residential Floor Insulation

OUC added a Floor Insulation rebate to incent customers to insulate wood floors over unconditioned spaces. This incentive is mostly geared towards older homes that were not built to today's more energy efficient standards. The $0.07 per square foot incentive is for a minimum of R-11 floor insulation.

4.2.7 Energy Star Washing Machine

OUC added a $50 incentive for the purchase of Energy Star washing machines to bring customers' attention to the benefits of these new machines. Not only do they use less electricity and water, but they also reduce the energy required to dry the clothes which accounts for the majority of the electric savings.

4.2.8 Solar Water Heating

OUC changed its previous incentive of $0.03 per kWh equivalent production incentive to a one time upfront rebate of $1,000 to incent customers to purchase a Solar Water Heater. OUC continues to partner with Orlando Federal Credit Union (OFCU) to provide OUC's residential customers with low interest loan options for installing Solar Thermal Systems. Below are the low interest loan rates and terms for the solar thermal program.

Solar Thermal Systems
($7,500 maximum loan amount)

TERMS (MONTHS)	RATE (APR)
36	0.00%
60	2.75%
84	4.00%

4.2.9 Heat Pump Water Heaters

OUC added a new incentive of $650 for the purchase of a Heat Pump Water Heater. It appears this technology has passed the development stage, become more affordable and has become more of a standard option for customers to consider. As with other incentives, this has the potential to change as equipment minimum efficiency standards change in the future.

4.2.10 Commercial Custom Incentive Program

OUC developed a program to accommodate the various other efficiency improvements possible in a commercial application that were not covered by an existing standard conservation program. It is impractical to have specific individual programs for all potential conservation measures especially when there are technological changes and improvements occurring all the time. With the Custom Incentive program, OUC can accommodate practically any measure that can reduce electric demand above code requirements that a commercial customer wants to implement. The incentive is $250/KW provided it is a measure other than just an indoor lighting retrofit. Qualifying measures can include chillers, thermal storage systems, packaged cooling unit replacements, fan and pump motor efficiency upgrades, refrigeration equipment, etc. The program brochure is available at:

http://www.ouc.com/Libraries/RG_Documents/CommIndustrial_Incentives_Info_Sheets_lo.sflb.ashx

4.2.11 Community Solar Farm

Part of OUC's financial strength is having a diverse fleet of generation, including renewables. OUC is always looking for new ways to increase involvement from customers in its sustainability efforts, and in 2013, OUC built the first Community Solar Farm in Central Florida. This innovative project allowed customers to "buy a piece of the sun" and receive the benefits of solar without having to install it on their own roof. The program was so popular is sold out in six days. A total of 39 customers signed on and began receiving power in October 2013.

In addition, OUC worked with the City of Orlando and ESA to develop a 417.6-kW roof-mounted PV solar array atop the City's Fleet Maintenance Building that is expected to generate about 580,000 kWh annually, equivalent to powering about 45 average-sized Orlando homes and offsetting 2,375 vehicles' gas emission per year.

5 Forecast of Facilities Requirements

5.1 EXISTING CAPACITY RESOURCES AND REQUIREMENTS

5.1.1 Existing and Planned Generating Capacity

Tables 6-1 and 6-2, which are presented at the end of this section, indicate that the combined installed generating capability for OUC and St. Cloud (as of January 1, 2014) is 1,582 MW in the winter and 1,514 MW in the summer. OUC's existing generating capability (described in more detail in Section 2.0) consists of the following:

- A joint ownership share in the Stanton Energy Center (Units 1, 2, and Stanton A)
- Sole ownership of Stanton Energy Center Unit B (Stanton B)
- Joint ownership shares of the Indian River combustion turbine units
- Joint ownership shares of Crystal River Unit 3, McIntosh Unit 3, and St. Lucie Unit 2

Additionally, St. Cloud's entitlement to capacity from Stanton Unit 2 is included as generating capability, consistent with the Interlocal Agreement described in Section 2.0

5.1.2 Power Purchase Agreements

Corresponding to the construction of Stanton A, OUC entered into a PPA with SCF to purchase capacity from SCF's 65 percent ownership share of Stanton A. The original Stanton A PPA was for a term of 10 years and allowed OUC, KUA, and FMPA to purchase all of SCF's 65 percent capacity share of Stanton A for 10 years. The utilities retained the right to reduce the capacity purchased from SCF by 50 MW each year, beginning in the sixth year of the PPA, as long as the total reduction in capacity purchased did not exceed 200 MW. The utilities originally had options to extend the PPA beyond its initial term. OUC, KUA, and FMPA have unilateral options to purchase all of Stanton A's capacity for the estimated 30 year useful life of the unit. Subsequent amendments to the original PPA continue OUC's capacity purchase until the 16th year of the PPA. Beginning with the 16th contract year and ending with the 20th contract year, OUC will maintain the irrevocable right to reduce the amount of capacity purchased by either 20 MW or 40 MW per year, as long as the total reduction in purchased capacity does not exceed 160 MW. OUC has the option of terminating the PPA on September 30, 2023, or extending the PPA up to an additional 10 years through two separate 5 year extensions.

5.1.3 Power Sales Agreements

OUC's power sales to Vero Beach, FPL, Bartow, Lake Worth, and Winter Park are described in Section 2.3. As part of its negotiations with Vero Beach regarding early termination of OUC's power sale, OUC will receive Vero Beach's ownership shares in Stanton Energy Center Units 1 and beginning January 1, 2015. Increases to OUC's generating capacity associated with these units are reflected in this Ten-Year Site Plan.

5.1.4 Retirements of Generating Facilities

OUC has not scheduled any unit retirements over the planning horizon, but will continue to evaluate options on an ongoing basis. One factor affecting potential unit modifications and/or retirements is the impact of pending future environmental regulations. OUC will continue to monitor future environmental regulations that may impact their operating fleet and decisions related to generating units, and develop appropriate corresponding compliance plans.

As discussed previously, Crystal River Unit 3 has been out of service since August 2009, and Duke Energy has announced the unit will be retired rather than being brought back into service. Crystal River Unit 3 is not included as a generating resource in this Ten-Year Site Plan.

5.2 RESERVE MARGIN CRITERIA

The Florida Public Service Commission (FPSC) has established a minimum planned reserve margin criterion of 15 percent in 25-6.035 (1) Florida Administrative Code for the purposes of sharing responsibility for grid reliability. The 15 percent minimum planned reserve margin criterion is generally consistent with practice throughout much of the industry. OUC has adopted the 15 percent minimum reserve margin requirement as its planning criterion.

5.3 FUTURE RESOURCE NEEDS

5.3.1 Generator Capabilities and Requirements Forecast

Tables 6-1 and 6-2 (presented at the end of this section) display the forecast reserve margins for the combined OUC and St. Cloud systems for the winter and summer seasons, respectively. OUC's capacity from renewable projects (discussed in Section 2.4) that is projected to be available at the time of peak demand is also reflected in Tables 6-1 and 6-2.

Table 6-1 and Table 6-2 indicate that OUC is projected to have adequate generating capacity to maintain the 15 percent reserve margin requirements throughout both the summer and winter seasons considered in this Ten-Year Site Plan. These projections consider OUC's capacity allocations associated with recent upgrades to the existing St. Lucie Unit 2, as well as capacity increases associated with recent efficiency improvements for Stanton Units 1 and 2.

5.3.2 Transmission Capability and Requirements Forecast

OUC continuously monitors and upgrades the bulk power transmission system as necessary to provide reliable electric service to its customers. OUC's current transmission system planning criteria are summarized in its annual filing to the Federal Energy Regulatory Commission. Please see OUC's FERC Form 715 for additional information.

Table 5-1 Projected Winter Reserve Requirements – Base Case

Year	Retail and wholesale Peak Demand (MW)								Available Capacity (MW)				Reserves (MW)		Excess/(Deficit) Capacity to Maintain 15% Reserve Margin[6] (MW)
	OUC	STC	Vero Beach	Bartow	Lake Worth	Winter Park	FPL	Total	Installed[1]	SEC A PPA	Renewables[2]	Total[3]	Required[4]	Available[5]	
2013/14	1,019	143	98	61	0	19	0	1,340	1,582	343	14	1,940	174	600	425
2014/15	1,028	146	0	64	76	19	38	1,371	1,620	343	14	1,978	176	607	431
2015/16	1,059	150	0	65	77	19	38	1,408	1,620	343	14	1,978	181	569	388
2016/17	1,077	153	0	66	78	19	38	1,430	1,620	343	14	1,978	184	548	363
2017/18	1,099	157	0	66	79	19	0	1,420	1,620	343	14	1,978	188	558	370
2018/19	1,119	161	0	0	0	19	0	1,299	1,620	343	14	1,978	192	679	487
2019/20	1,139	164	0	0	0	0	0	1,304	1,620	343	14	1,978	196	674	478
2020/21	1,155	168	0	0	0	0	0	1,323	1,620	343	14	1,978	198	655	456
2021/22	1,176	172	0	0	0	0	0	1,348	1,620	343	14	1,978	202	629	427
2022/23	1,195	176	0	0	0	0	0	1,371	1,620	343	14	1,978	206	606	401

[1] Includes existing net capability to serve OUC and St. Cloud. Reflects OUC's share of the increased capacity associated with the recent upgrades of the existing St. Lucie Unit 2 nuclear generating unit, as well as changes to capacity for Stanton Units 1 and 2 associated with recent efficiency improvements. Also includes increases to capacity of Stanton Units 1 and 2 and St. Lucie Unit 2 associated with termination of OUC's power sale to Vero Beach.

[2] Capacity of "Renewables" reflects capacity value projected to be available at time of peak demand.

[3] "Totals" may not add due to rounding.

[4] "Required Reserves" include 15 percent reserve margin on OUC retail peak demand and STC retail peak demand. Reserves associated with the Vero Beach contract are included in the column labeled "Vero Beach".

[5] "Available Reserves" equals the difference between total available capacity and total peak demand.

[6] Calculated as the difference between available reserves and required reserves.

Table 5-2 Projected Summer Reserve Requirements – Base Case

Year	Retail and wholesale Peak Demand (MW)								Available Capacity (MW)				Reserves (MW)		Excess/(Deficit) Capacity to Maintain 15% Reserve Margin[6] (MW)
	OUC	STC	Vero Beach	Bartow	Lake Worth	Winter Park	FPL	Total	Installed[1]	SEC A PPA	Renewables[2]	Total[3]	Required[4]	Available[5]	
2014	1,098	147	98	64	88	19	0	1,514	1,513	322	16	1,852	187	337	151
2015	1,123	150	0	65	89	19	38	1,483	1,551	322	16	1,890	191	406	215
2016	1,145	154	0	66	91	19	38	1,513	1,551	322	16	1,890	195	377	182
2017	1,168	157	0	66	92	19	38	1,540	1,551	322	16	1,890	199	350	151
2018	1,188	161	0	0	93	19	0	1,462	1,551	322	16	1,890	202	428	226
2019	1,209	165	0	0	0	19	0	1,393	1,551	322	16	1,890	206	496	290
2020	1,225	169	0	0	0	0	0	1,394	1,551	322	16	1,890	209	495	286
2021	1,247	173	0	0	0	0	0	1,420	1,551	322	16	1,890	213	470	257
2022	1,267	177	0	0	0	0	0	1,444	1,551	322	16	1,890	217	446	230
2023	1,287	181	0	0	0	0	0	1,468	1,551	322	16	1,890	220	421	201

[1] Includes existing net capability to serve OUC and St. Cloud. Reflects OUC's share of the increased capacity associated with the recent upgrades of the existing St. Lucie Unit 2 nuclear generating unit, as well as changes to capacity for Stanton Units 1 and 2 associated with recent efficiency improvements. Also includes increases to capacity of Stanton Units 1 and 2 and St. Lucie Unit 2 associated with termination of OUC's power sale to Vero Beach.

[2] Capacity of "Renewables" reflects capacity value projected to be available at time of peak demand.

[3] "Totals" may not add due to rounding.

[4] "Required Reserves" include 15 percent reserve margin on OUC retail peak demand and STC retail peak demand. Reserves associated with the Vero Beach contract are included in the column labeled "Vero Beach".

[5] "Available Reserves" equals the difference between total available capacity and total peak demand.

[6] Calculated as the difference between available reserves and required reserves.

6 Supply-Side Alternatives

As discussed previously, consideration of OUC's existing generating resources and OUC's current base case load forecast indicates that OUC is expecting to have adequate capacity to satisfy forecast reserve margin requirements through the 2023(both summer and winter seasons). As such, no capacity additions are reflected in this Ten-Year Site Plan. It should be noted that OUC's existing Stanton Energy Center and Indian River sites may accommodate future generating unit additions. OUC will continue to evaluate its power supply requirements and alternatives as part of its planning processes.

7 Economic Evaluation Criteria and Methodology

This section presents the economic evaluation criteria and methodology used for OUC's current planning processes.

7.1 ECONOMIC PARAMETERS

The economic parameters are summarized below and are presented on an annual basis.

7.1.1 Inflation and Escalation Rates

The general inflation rate, construction cost escalation rate, fixed O&M escalation rate, and nonfuel variable O&M escalation rate are each assumed to be 2.5 percent.

7.1.2 Present Worth Discount Rate

The present worth discount rate is assumed to be equal to OUC's embedded rate for new debt of 5.5 percent.

7.1.3 Interest During Construction Rate

The interest during construction (IDC) rate used by OUC for economic evaluations is 5.5 percent.

7.1.4 Fixed Charge Rate

The fixed charge rate (FCR) represents the sum of a project's fixed charges as a percent of the initial investment cost. When the FCR is applied to the initial investment, the product equals the revenue requirements needed to offset the fixed charges during a given year. A separate FCR can be calculated and applied to each year of an economic analysis, but it is common practice to use a single, levelized FCR that has the same present value as the year-by-year FCR. The FCR calculation includes 0.10 percent for property insurance. Bond issuance fees and insurance costs are not included in the calculation of the levelized FCR, since these are already considered in OUC's embedded debt rate. Assuming a 20 year financing term, the resulting levelized FCR is 4.67 percent. Assuming a 30 year financing term, the resulting levelized FCR is 6.98 percent.

7.2 FUEL PRICE FORECASTS

7.2.1 Coal

The existing Stanton Units 1 and 2 can be operated on various coal types including low sulfur Central Appalachian and Illinois basin/Western Kentucky coals. OUC developed projections of delivered coal prices to the Stanton Energy Center. The annual price projections for blended low sulfur Central Appalachian and Illinois Basin/Western Kentucky coal delivered to the Stanton Energy Center are presented in Table 8-1.

7.2.2 Natural Gas

Natural gas is the primary fuel for Stanton A, Stanton B, and OUC's Indian River combustion turbines. The forecasted price for natural gas delivered to the Indian River and Stanton Energy Center sites is presented in Table 8-1. The gas price includes the Florida Gas Transmission (FGT) Zone 3 basis adder for Henry Hub and fuel loss and usage charges. Firm natural gas transmission costs for existing firm natural gas transportation capacity are not included since such costs are associated with OUC's existing units and would not affect future resource decisions as they are considered to be "sunk costs."

7.2.3 No. 2 Fuel Oil

No. 2 fuel oil is the secondary fuel for Stanton A and B, as well as for OUC's Indian River combustion turbines. Fuel oil is not considered a primary fuel source for OUC's existing units. For informational purposes, OUC's current fuel oil price projections are presented in Table 8-1.

7.2.4 Nuclear

Forecast annual prices for nuclear fuel, which are required for OUC's ownership shares of St. Lucie Units 1 and 2, are presented in Table 8-1.

Table 7-1 Delivered Fuel Price Forecasts (Nominal $/MMBtu)

CALENDAR YEAR	STANTON ENERGY CENTER COAL - DELIVERED	DELIVERED NATURAL GAS	ULTRA-LOW SULFUR DIESEL (0.0015% SULFUR)	NUCLEAR
2014	$3.45	$4.69	$16.31	$0.69
2015	$3.20	$4.62	$15.64	$0.72
2016	$3.28	$4.50	$ 15.50	$0.76
2017	$3.38	$5.22	$16.32	$0.80
2018	$3.48	$5.54	$17.06	$0.84
2019	$3.59	$5.74	$17.71	$0.88
2020	$3.69	$5.90	$18.51	$0.93
2021	$ 3.80	$6.11	$19.33	$0.99
2022	$3.91	$6.31	$20.18	$1.05
2023	$4.02	$6.52	$21.07	$1.11

8 Analysis and Results

As discussed throughout this Ten-Year Site Plan, OUC is not projected to require additional capacity to satisfy reserve margin requirements throughout the term of this Ten-Year Site Plan under its base case load forecast. OUC will continue to evaluate its power supply requirements and alternatives during the timeframe considered in this Ten-Year Site Plan as well as beyond 2022, and in doing so will evaluate possible participation in new and/or existing nuclear generating units if deemed appropriate.

For informational purposes, Black & Veatch's POWRPRO was used to obtain the annual production costs associated for various load, fuel, and other sensitivity cases. POWRPRO is a computer-based chronological production costing model developed for use in power supply system planning. POWRPRO simulates the hour-by-hour operation of a power supply system over a specified planning period. Required inputs include the performance characteristics of generating units, fuel costs, and the system hourly load profile for each year. POWRPRO has been used in numerous Need for Power Applications approved by the Florida Public Service Commission, including FMPA's Treasure Coast Energy Center Unit 1 Need for Power Application (approved in July 2005) and OUC's Stanton Energy Center Unit B Need for Power Application (approved in May 2006).

POWRPRO summarizes each unit's operating characteristics for every year of the planning horizon. These characteristics include, among others, each unit's annual generation, fuel consumption, fuel cost, average net operating heat rate, the number of hours the unit was on line, the capacity factor, variable O&M costs, and the number of starts and associated costs. Fixed O&M costs and debt service on existing generating units are generally considered sunk costs that will not vary from one expansion plan to another and were therefore not included for existing units. The annual capacity charges for the Stanton A purchase power agreement likewise were not included, as they also represent sunk costs. Similarly, fixed costs for firm natural gas transportation capacity from FGT for existing firm natural gas transportation capacity are considered sunk costs and are not included. Costs associated with OUC's renewable power purchases have not been included, as they would be the same for every expansion plan. The operating costs of each unit are aggregated to determine annual operating costs for each year of the expansion plan.

The cumulative present worth cost (CPWC) calculations presented in this section account for annual system costs (i.e. fuel and energy, non-fuel variable O&M, and startup costs) for each year of the expansion planning period and discounts each back to 2014 at the present worth discount rate of 5.5 percent. These annual present worth costs are then summed over the 2014 through 2023 period to calculate the total CPWC of the expansion plan being considered. Such analysis allows for a comparison of CPWC between various capacity expansion plans across the sensitivities considered

8.1 CPWC ANALYSES

8.1.1 Base Case Analysis

The base case considers the base load forecast presented in Section 4 and the base fuel price forecasts presented in Section 8 of this Ten-Year Site Plan. As discussed previously, no capacity additions are projected to be required under the base case load forecast. The CPWC for the production costs associated with the base case analysis is approximately $2.02 billion.

8.1.2 Sensitivity Analyses

As part of its capacity planning process, OUC considers a number of sensitivity analyses to measure the impact of variations to critical assumptions. Among the numerous sensitivities that OUC may consider in its planning processes are high and low fuel prices, high and low load and energy growth projections, a case in which the differential between natural gas and coal price projections is held constant over time, and a high present worth discount rate case. Of these sensitivities only the high and low load and energy growth projection sensitivities would potentially impact the timing of unit additions. For informational purposes, the following subsections describe the high and low load and energy growth, the high and low fuel price, the constant differential fuel price, and the high present worth discount rate sensitivities.

8.1.2.1 High Load Forecast Sensitivity

The high load forecast is presented in Section 4.0; no capacity additions are projected to be required to maintain the 15 percent reserve margin under the high load forecast sensitivity. The CPWC for the production costs associated with the high load analysis is approximately $2.39 billion.

8.1.2.2 Low Load Forecast Sensitivity

The low load forecast is presented in Section 4.0; no capacity additions are projected to be required to maintain the 15 percent reserve margin under the low load forecast sensitivity. The CPWC for the production costs associated with the low load analysis is approximately $2.23 billion.

8.1.2.3 High Fuel Price Forecast Sensitivity

The fuel price projections for the high fuel price sensitivity are shown in Table 9-1. It should be noted that OUC's contractual arrangements for coal delivery will mitigate the effects of volatility in coal prices; however, for purposes of this analysis this factor was not considered.

As discussed previously, no capacity additions are projected to be required under the base case load forecast. The CPWC for the production costs associated with the high natural gas and coal price forecast sensitivity is approximately $2.31 billion.

8.1.2.4 Low Fuel Price Forecast Sensitivity

The fuel price projections for the low fuel price sensitivity are shown in Table 9-2. It should be noted that OUC's contractual arrangements for coal delivery will mitigate the effects of volatility in coal prices; however, for purposes of this analysis this factor was not considered.

As discussed previously, no capacity additions are projected to be required under the base case load forecast. The CPWC for the production costs associated with the low natural gas and coal price forecast sensitivity is approximately $1.56 billion.

8.1.2.5 Constant Differential Natural Gas and Coal Price Forecast Sensitivity

The constant differential natural gas and coal price forecast sensitivity assumes that the delivered natural gas price and delivered coal price forecast for 2014 presented in Section 8.0 would remain constant in real terms. The constant differential price forecasts shown in Table 9-3 were developed by applying the general inflation rate (2.5 percent) to the base case 2014 natural gas and coal price forecasts to convert from real to nominal dollars. The fuel oil and nuclear fuel price forecasts presented in Section 8.0 have not been changed for this sensitivity.

As discussed previously, no capacity additions are projected to be required under the base case load forecast. The CPWC for the production costs associated with the constant differential natural gas and coal price forecast sensitivity is approximately $2.12 billion.

Table 8-1 Delivered Fuel Price Forecasts – High Fuel Price Sensitivity
(Nominal $/MMBtu)

CALENDAR YEAR	STANTON ENERGY CENTER COAL - DELIVERED	DELIVERED NATURAL GAS	ULTRA-LOW SULFUR DIESEL (0.0015% SULFUR)	NUCLEAR
2014	$3.97	$5.39	$18.76	$0.79
2015	$3.68	$5.32	$17.99	$0.83
2016	$3.77	$5.17	$17.82	$0.88
2017	$3.89	$6.01	$18.77	$0.92
2018	$4.00	$6.37	$19.62	$0.96
2019	$4.12	$6.60	$20.37	$1.02
2020	$4.25	$6.78	$21.29	$1.07
2021	$4.37	$7.02	$22.23	$1.14
2022	$4.50	$7.26	$23.21	$1.20
2023	$4.63	$7.50	$24.23	$1.28

Table 8-2 Delivered Fuel Price Forecasts – Low Fuel Price Sensitivity
(Nominal $/MMBtu)

CALENDAR YEAR	STANTON ENERGY CENTER COAL - DELIVERED	DELIVERED NATURAL GAS	ULTRA-LOW SULFUR DIESEL (0.0015% SULFUR)	NUCLEAR
2014	$2.59	$3.52	$12.24	$0.52
2015	$2.40	$3.47	$11.73	$0.54
2016	$2.46	$3.37	$11.62	$0.57
2017	$2.54	$3.92	$12.24	$0.60
2018	$2.61	$4.15	$12.80	$0.63
2019	$2.69	$4.31	$13.28	$0.66
2020	$2.77	$4.42	$13.88	$0.70
2021	$2.85	$4.58	$14.50	$0.74
2022	$2.93	$4.74	$15.14	$0.79
2023	$3.02	$4.89	$15.80	$0.83

Table 8-3 Delivered Fuel Price Forecasts – Constant Differential Fuel Price Sensitivity
(Nominal $/MMBtu)

CALENDAR YEAR	STANTON ENERGY CENTER COAL - DELIVERED	DELIVERED NATURAL GAS	ULTRA-LOW SULFUR DIESEL (0.0015% SULFUR)	NUCLEAR
2014	$3.45	$4.69	$16.31	$0.69
2015	$3.54	$4.80	$15.64	$0.72
2016	$3.62	$ 4.93	$15.50	$0.76
2017	$3.72	$5.05	$16.32	$0.80
2018	$3.81	$5.17	$17.06	$0.84
2019	$3.90	$5.30	$17.71	$0.88
2020	$4.00	$5.44	$18.51	$0.93
2021	$4.10	$5.57	$19.33	$0.99
2022	$4.20	$5.71	$20.18	$1.05
2023	$4.31	$5.85	$21.07	$1.11

8.1.2.6 High Present Worth Discount Rate Sensitivity

The high present worth discount rate sensitivity assumes a 10 percent present worth discount rate instead of the 5.5 percent present worth discount rate used in the other economic analyses discussed in this section. As discussed previously, no capacity additions are projected to be required under the base case load forecast. The CPWC for the production costs associated with the high present worth discount rate sensitivity is approximately $1.64 billion.

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9 Environmental and Land Use Information

As discussed previously in this Ten-Year Site Plan, OUC's base case load forecast indicates that no additional capacity is necessary to satisfy reserve margin requirements throughout the term of this Ten-Year Site Plan. As such, no capacity additions are reflected in this Ten-Year Site Plan. It should be noted that OUC's existing Stanton Energy Center and Indian River sites may accommodate future generating unit additions.

10 Conclusions

As discussed throughout this Ten-Year Site Plan, OUC's base case load forecast indicates that no additional capacity is required to satisfy projected reserve margin requirements throughout the term considered in this Ten-Year Site Plan. As such, no capacity additions are reflected in this Ten-Year Site Plan. It should be noted that OUC's existing Stanton Energy Center and Indian River sites may accommodate future generating unit additions. OUC will continue to evaluate its power supply requirements and alternatives as part of its planning processes.

11 Ten-Year Site Plan Schedules

This section presents the schedules required by the Ten-Year Site Plan rules for the Florida Public Service Commission (FPSC). The Schedules are presented in the same format in which they will be provided in response to the FPSC's Supplemental Data Request. The information contained within the FPSC Schedules is representative of the combined OUC and City of St. Cloud systems, consistent with all sections of the 2014 OUC Ten-Year Site Plan.

Schedule 1
Existing Generating Facilities
As of December 31, 2013

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Plant Name	Unit No.	Location	Unit Type	Fuel Pri	Fuel Alt	Fuel Transport Pri	Fuel Transport Alt	Alt. Fuel Days Use	Commercial In-Service Month/Year	Expected Retirement Month/Year	Gen. Max. Nameplate KW[1]	Net Capability Summer MW	Net Capability Winter MW
Indian River	A	Brevard	GT	NG	DFO	PL	TK	0.2	06/89	Unknown	41,400	18[2]	23.4[2]
Indian River	B	Brevard	GT	NG	DFO	PL	TK	0.2	07/89	Unknown	41,400	18[2]	23.4[2]
Indian River	C	Brevard	GT	NG	DFO	PL	TK	0.2	08/92	Unknown	130,000	85.3[3]	100.3[3]
Indian River	D	Brevard	GT	NG	DFO	PL	TK	0.2	10/92	Unknown	130,000	85.3[3]	100.3[3]
Stanton Energy Center	1	Orange	ST	BIT	NA	RR	UN	UN	07/87	Unknown	464,500	302.3[4]	302.3[4]
Stanton Energy Center	2	Orange	ST	BIT	NA	RR	UN	UN	06/96	Unknown	464,500	339.7[5]	339.7[5]
Stanton Energy Center	A	Orange	CC	NG	DFO	PL	TK	3	10/01	Unknown		173.6[6]	184.8[6]
Stanton Energy Center	B	Orange	CC	NG	DFO	PL	TK	3	02/10	Unknown	333,000	298	312
McIntosh	3	Polk	ST	BIT	NA	REF	UN	UN	09/82	Unknown		133[7]	136[7]
Crystal River[8]	3	Citrus	ST	NUC	NA	TK	UN	UN	03/77	02/13		13	13
St. Lucie[9]	2	St. Lucie	ST	NUC	NA	TK	UN	UN	08/83	Unknown		60	60

NOTES:

(1) Nameplate ratings are reported for units which OUC maintains majority ownership. Values reported are for the entire unit (not just OUC's ownership share)

(2) Reflects an OUC ownership share of 48.8 percent.

(3) Reflects an OUC ownership share of 79.0 percent.

(4) Reflects an OUC ownership share of 68.6 percent.

(5) Reflects an OUC ownership share of 71.6 percent and St. Cloud entitlement of 3.4 percent.

(6) Reflects an OUC ownership share of 28.0 percent.

(7) Reflects an OUC ownership share of 40.0 percent.

(8) Capacity from Crystal River Unit No. 3 Is not included as available capacity given it has not operated since summer of 2009 and is retired.

(9) OUC owns approximately 6.1 percent of St. Lucie Unit No. 2. Reliability exchange divides 50 percent power from Unit No. 1 and 50 percent power from Unit No. 2. Reflects increased capacity following completion of capacity uprate in December 2012.

Schedule 2.1
History and Forecast of Energy Consumption and Number of Customers by Customer Class

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
			Rural and Residential				Commercial	
Year	Population	Members per Household	GWH	Average No. of Customers	Average KWH Consumption Per Customer	GWH	Average No. of Customers	Average KWH Consumption Per Customer
HISTORY:								
2004	403,900	2.54	2,082	158,755	13,115	300	18,866	15,902
2005	421,100	2.54	2,198	165,545	13,277	320	19,672	16,267
2006	436,000	2.55	2,241	170,765	13,125	340	20,034	16,960
2007	451,696	2.56	2,223	176,435	12,599	363	20,230	17,922
2008	457,897	2.55	2,269	179,785	12,622	395	20,463	19,283
2009	452,220	2.55	2,235	177,163	12,615	317	20,762	15,264
2010	454,300	2.55	2,325	178,197	13,047	311	21,648	14,366
2011	458,940	2.55	2,223	180,072	12,347	311	22,138	14,026
2012	466,940	2.56	2,140	182,570	11,723	319	23,198	13,730
2013	476,916	2.56	2,153	186,455	11,549	345	22,585	15,254
FORECAST:								
2014	483,950	2.56	2,184	189,203	11,541	348	22,949	15,184
2015	493,616	2.56	2,217	192,977	11,486	354	23,448	15,107
2016	505,119	2.56	2,258	197,472	11,436	360	24,044	14,968
2017	517,190	2.56	2,302	202,185	11,388	367	24,670	14,859
2018	529,484	2.56	2,353	206,989	11,367	372	25,307	14,710
2019	541,796	2.56	2,404	211,797	11,352	379	25,945	14,607
2020	554,293	2.56	2,452	216,681	11,318	386	26,593	14,502
2021	566,590	2.56	2,503	221,482	11,300	391	27,230	14,372
2022	578,841	2.56	2,556	226,271	11,294	398	27,866	14,284
2023	591,249	2.56	2,612	231,117	11,301	405	28,509	14,198

Notes:
Represents total of OUC and St. Cloud.

Schedule 2.2
History and Forecast of Energy Consumption and Number of Customers by Customer Class

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Year	GWH	Industrial Average No. of Customers	Average KWH Consumption Per Customer	Railroads and Railways GWH	Street & Highway Lighting GWH	Other Sales to Public Authorities GWH	Total Sales to Ultimate Consumers GWH
HISTORY:							
2004	3,221	5,500	585,636	0	42	6	5,651
2005	3,283	5,561	590,361	0	45	6	5,852
2006	3,347	5,675	589,871	0	49	6	5,984
2007	3,434	5,843	587,637	0	54	6	6,079
2008	3,390	5,961	568,659	0	45	17	6,115
2009	3,418	6,725	508,217	0	46	15	6,031
2010	3,414	7,201	474,101	0	51	31	6,030
2011	3,422	7,428	460,737	0	34	30	6,021
2012	3,392	7,558	448,853	0	35	30	5,955
2013	3,467	5,718	606,442	0	29	30	6,025
FORECAST:							
2014	3,508	5,811	603,745	0	29	29	6,099
2015	3,634	5,939	611,780	0	28	28	6,260
2016	3,710	6,089	609,409	0	27	27	6,382
2017	3,772	6,243	604,197	0	25	25	6,492
2018	3,835	6,399	599,305	0	24	24	6,609
2019	3,895	6,556	594,141	0	24	24	6,726
2020	3,947	6,715	587,788	0	24	24	6,832
2021	3,998	6,872	581,732	0	24	24	6,940
2022	4,050	7,029	576,137	0	24	24	7,052
2023	4,103	7,187	570,834	0	24	25	7,169

Notes:
Represents total of OUC and St. Cloud.

Schedule 2.3
History and Forecast of Energy Consumption and Number of Customers by Customer Class

(1)	(2)	(3)	(4)	(5)	(6)
Year	Sales for Resale GWH	Utility Use & Losses GWH	Net Energy for Load GWH	Other Customers (Average No.)	Total No. of Customers
HISTORY:					
2004	714	234	6,599	0	183,121
2005	704	219	6,775	0	190,778
2006	18	248	6,250	0	196,474
2007	0	262	6,341	0	202,508
2008	0	150	6,265	0	206,209
2009	0	223	6,252	0	204,650
2010	469	277	6,767	0	207,046
2011	768	188	6,977	0	209,638
2012	764	346	7,135	0	214,758
2013	769	272	7,065	0	214,758
FORECAST:					
2014	1,168	303	7,569	0	217,963
2015	1,027	298	7,585	0	222,364
2016	1,035	304	7,721	0	227,604
2017	1,044	308	7,844	0	233,099
2018	551	313	7,473	0	238,695
2019	98	319	7,143	0	244,298
2020	0	324	7,156	0	249,989
2021	0	328	7,268	0	255,585
2022	0	332	7,384	0	261,165
2023	0	338	7,506	0	266,812

Notes:
Represents total of OUC and St. Cloud.
2010 - 2012 "Sales for Resale" represent sales to City of Vero Beach.
20132 "Sales for Resale" represents sales to City of Vero Beach and City of Bartow.
Forecast "Sales for Resale" represent projected sales to City of Vero Beach for 2014, City of Bartow for 2014 through 2017, Lake Worth for 2014 through 2018, and Winter Park for 2014 through 2019.

Schedule 3.1
History and Forecast of Summer Peak Demand
Base Case

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Year	Total	Wholesale	Retail	Interruptible	Residential Load Management	Residential Conservation	Comm./Ind. Load Management	Comm./Ind. Conservation	Net Firm Demand
HISTORY:									
2004	1,311	231	1,080	1	0	0	0	0	1,310
2005	1,353	147	1,206	0	0	0	0	0	1,353
2006	1,230	22	1,208	0	0	0	0	0	1,230
2007	1,256	0	1,256	0	0	0	0	0	1,256
2008	1,221	0	1,221	0	0	0	0	0	1,221
2009	1,244	0	1,244	0	0	0	0	0	1,244
2010	1,295	74	1,218	0	0	1	0	1.7	1,292
2011	1,371	164	1,205	0	0	1.0	0	0.6	1,369
2012	1,381	165	1,214	0	0	0.6	0	1.7	1,379
2013	1,413	157	1,256	0	0	0.7	0	0.9	1,411
FORECAST:									
2014	1,515	269	1,246	0	0	0.5	0	0.7	1,514
2015	1,486	210	1,275	0	0	1.0	0	1.4	1,483
2016	1,516	214	1,302	0	0	1.5	0	2.1	1,513
2017	1,545	215	1,330	0	0	2.0	0	2.8	1,540
2018	1,468	112	1,355	0	0	2.5	0	3.5	1,462
2019	1,400	19	1,381	0	0	3.0	0	4.2	1,393
2020	1,403	0	1,403	0	0	3.5	0	4.9	1,394
2021	1,430	0	1,430	0	0	4.0	0	5.6	1,420
2022	1,454	0	1,454	0	0	4.5	0	6.3	1,444
2023	1,480	0	1,480	0	0	5.0	0	7.0	1,468

Notes:
Represents total of OUC and St. Cloud. Peak demands may not match other schedules due to non-coincidence of OUC and St. Cloud peaks and/or rounding.
"Residential Conservation" and "Comm/Ind. Conservation" represent cumulative annual demand reductions.
Historical "Wholesale" includes power sales to Vero Beach in 2010 through 2013, and to Bartow in 2013.
Forecast "Wholesale" represents projected sales to City of Vero Beach (2014), City of Bartow (2014 through 2017), FPL (2015 through 2017), Lake Worth (2014 through 2018), and Winter Park (2014 through 2019).
Forecast "Net Firm Demand" may not exactly match up with peak demands presented in Section 6 of the 2011 OUC Ten-Year Site Plan due to rounding.
2010 through 2013 "Conservation" represents OUC's actual conservation achievements. Forecast "Conservation" represents cumulative conservation projections.

Schedule 3.2
History and Forecast of Winter Peak Demand
Base Case

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Year	Total	Wholesale	Retail	Interruptible	Residential Load Management	Residential Conservation	Comm./Ind. Load Management	Comm./Ind. Conservation	Net Firm Demand
HISTORY:									
2003/04	1,414	277	1,137	1	0	0	0	0	1,413
2004/05	1,196	241	955	1	0	0	0	0	1,195
2005/06	1,203	123	1,080	1	0	0	0	0	1,202
2006/07	1,117	22	1,095	0	0	0	0	0	1,117
2007/08	957	0	957	0	0	0	0	0	957
2008/09	1,178	0	1,178	0	0	0	0	0	1,178
2009/10	1,337	36	1,299	0	0	0.8	0	0.9	1,335
2010/11	1,323	174	1,147	0	0	0.8	0	0.6	1,321
2011/12	1,216	182	1,032	0	0	0.5	0	1.8	1,214
2012/13	1,183	155	1,028	0	0	0.5	0	0.9	1,182
FORECAST:									
2013/14	1,341	178	1,163	0	0	0.2	0	0.7	1,340
2014/15	1,373	197	1,175	0	0	0.4	0	1.4	1,371
2015/16	1,411	199	1,211	0	0	0.6	0	2.1	1,408
2016/17	1,433	200	1,233	0	0	0.8	0	2.8	1,430
2017/18	1,424	164	1,260	0	0	1.0	0	3.5	1,420
2018/19	1,304	19	1,285	0	0	1.2	0	4.2	1,299
2019/20	1,310	0	1,310	0	0	1.4	0	4.9	1,304
2020/21	1,330	0	1,330	0	0	1.6	0	5.6	1,323
2021/22	1,356	0	1,356	0	0	1.8	0	6.3	1,348
2022/23	1,380	0	1,380	0	0	2.0	0	7.0	1,371

Notes:
Represents total of OUC and St. Cloud. Peak demands may not match other schedules due to non-coincidence of OUC and St. Cloud peaks and/or rounding.
"Residential Conservation" and "Comm/Ind. Conservation" represent cumulative annual demand reductions.
Historical "Wholesale" includes power sales to Vero Beach in 2010/11 through 2012/13, and to Bartow in 2012/13.
Forecast "Wholesale" represents projected sales to City of Vero Beach (2014), City of Bartow (2014 through 2017), FPL (2015 through 2017), Lake Worth (2014 through 2018), and Winter Park (2014 through 2018).
Forecast "Net Firm Demand" may not exactly match up with peak demands presented in Section 6 of the 2011 OUC Ten-Year Site Plan due to rounding.
2010/11 through 2012/13 "Conservation" represents OUC's actual conservation achievements. Forecast "Conservation" represents cumulative conservation projections.

Schedule 3.3
History and Forecast of Annual Net Energy for Load - GWH
Base Case

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Year	Total	Residential Conservation	Comm./Ind. Conservation	Retail	Wholesale	Utility Use & Losses	Net Energy for Load	Load Factor %
HISTORY:								
2004	6,599	0	0	5,651	714	234	6,599	53.3%
2005	6,775	0	0	5,852	704	219	6,775	54.5%
2006	6,250	0	0	5,984	18	248	6,250	58.0%
2007	6,341	0	0	6,079	0	262	6,341	57.6%
2008	6,265	0	0	6,115	0	150	6,265	58.6%
2009	6,252	0	0	6,031	0	223	6,252	57.4%
2010	6,986	3.01	5.8	6,030	469	277	6,767	58.2%
2011	6,983	2.7	3.0	6,021	768	188	6,977	58.2%
2012	7,074	1.9	7.3	5,917	764	346	7,027	58.2%
2013	7,072	1.9	4.5	6,025	769	272	7,065	57.2%
FORECAST:								
2014	7,573	1.8	1.8	6,099	1,168	303	7,569	57.1%
2015	7,592	3.6	3.6	6,260	1,027	298	7,585	58.4%
2016	7,732	5.4	5.4	6,382	1,035	304	7,721	58.3%
2017	7,858	7.2	7.2	6,492	1,044	308	7,844	58.2%
2018	7,491	9.0	9.0	6,609	551	313	7,473	58.4%
2019	7,164	10.8	10.8	6,726	98	319	7,143	58.5%
2020	7,182	12.6	12.6	6,832	0	324	7,156	58.6%
2021	7,297	14.4	14.4	6,940	0	328	7,268	58.4%
2022	7,416	16.2	16.2	7,052	0	332	7,384	58.4%
2023	7,542	18.0	18.0	7,169	0	338	7,506	58.4%

Notes:
Represents total of OUC and St. Cloud. Peak demands may not match other schedules due to non-coincidence of OUC and St Cloud peaks and/or rounding.
"Residential Conservation" and "Comm/Ind. Conservation" represent cumulative annual GWh reductions.
Historical "Wholesale" includes power sales to Vero Beach in 2010/11 through 2012/13, and to Bartow in 2012/13.
Forecast "Wholesale" represents projected sales to City of Vero Beach (2014), City of Bartow (2014 through 2017), FPL (2015 through 2017), Lake Worth (2014 through 2018), and Winter Park (2014 through 2019).
Forecast "Net Firm Demand" may not exactly match up with peak demands presented in Section 6 of the 2011 OUC Ten-Year Site Plan due to rounding.
2010/11 through 2012/13 "Conservation" represents OUC's actual conservation achievements. Forecast "Conservation" represents cumulative conservation projections.

Schedule 4
Previous Year and 2-Year Forecast of Retail Peak Demand and Net Energy for Load by Month

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	2013 Actual		2014 Forecast		2015 Forecast	
Month	Peak Demand MW	NEL GWH	Peak Demand MW	NEL GWH	Peak Demand MW	NEL GWH
January	926	464	1,162	488	1,174	501
February	1,010	428	1,117	428	1,130	439
March	1,046	467	919	471	933	476
April	1,005	492	958	490	976	498
May	1,079	537	1,133	569	1,154	570
June	1,157	588	1,207	602	1,229	616
July	1,156	603	1,244	647	1,268	655
August	1,254	644	1,245	648	1,273	664
September	1,179	586	1,183	590	1,211	621
October	1,100	550	1,124	539	1,151	566
November	968	465	924	448	950	464
December	877	472	937	482	966	490

Notes:
Represents the total of OUC and St. Cloud retail peak demands and net energy for load. Wholesale sales are not included.
Peak demands may not match other schedules due to non-coincidence of OUC and St. Cloud peaks and/or rounding.

Schedule 5
Fuel Requirements

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
	Fuel Requirements		Units	Actual 2012	Actual 2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
(1)	Nuclear		Trillion BTU	3	5	5	5	5	5	5	5	5	5	5	5
(2)	Coal		1000 Ton	1,120	1,378	1,885	2,131	2,084	2,227	2,139	2,100	2,102	2,122	2,135	2,068
(3)	Residual	Total	1000 BBL	7	0	0	0	0	0	0	0	0	0	0	0
(4)		Steam	1000 BBL	7	0	0	0	0	0	0	0	0	0	0	0
(5)		CC	1000 BBL	0	0	0	0	0	0	0	0	0	0	0	0
(6)		CT	1000 BBL	0	0	0	0	0	0	0	0	0	0	0	0
(7)		Other	1000 BBL	0	0	0	0	0	0	0	0	0	0	0	0
(8)	Distillate	Total	1000 BBL	29	0	0	0	0	0	0	0	0	0	0	0
(9)		Steam	1000 BBL	2	0	0	0	0	0	0	0	0	0	0	0
(10)		CC	1000 BBL	1	0	0	0	0	0	0	0	0	0	0	0
(11)		CT	1000 BBL	0	0	0	0	0	0	0	0	0	0	0	0
(12)		Other	1000 BBL	0	0	0	0	0	0	0	0	0	0	0	0
(13)	Natural Gas	Total	1000 MCF	24,087	22,385	15,857	11,283	12,786	11,186	10,162	7,876	8,596	9,108	9,731	6,373
(14)		Steam	1000 MCF	1,475	1,566	0	0	0	0	0	0	0	0	0	0
(15)		CC	1000 MCF	22,443	20,716	15,771	11,177	12,690	11,089	10,040	7,736	8,460	8,967	9,599	6,198
(16)		CT	1000 MCF	169	103	86	106	96	97	122	140	135	141	132	175
(17)	Other (Specify)		Trillion BTU	0	0	0	0	0	0	0	0	0	0	0	0

Notes:
Represents fuel required to serve OUC and St. Cloud, and sales to City of Vero Beach (2014), City of Bartow (2014 through 2017), FPL (2015 through 2017), Lake Worth (2014 through 2018), and Winter Park (2014 through 2019).
Natural gas CC includes SECA purchases from Southern - Florida, LLC

Schedule 6.1
Energy Sources

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
	Energy Sources		Units	Actual 2012	Actual 2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
(1)	Firm Inter-Region Interchange		GWH	0	0	0	0	0	0	0	0	0	0	0	0
(2)	Nuclear		GWH	417	569	462	466	463	463	463	462	462	462	462	462
(3)	Coal		GWH	2,745	3,030	4,780	5,436	5,299	5,698	5,470	5,368	5,374	5,426	5,460	5,284
(4)	Residual	Total	GWH	0	0	0	0	0	0	0	0	0	0	0	0
(5)		Steam	GWH	0	0	0	0	0	0	0	0	0	0	0	0
(6)		CC	GWH	0	0	0	0	0	0	0	0	0	0	0	0
(7)		CT	GWH	0	0	0	0	0	0	0	0	0	0	0	0
(8)		Other	GWH	0	0	0	0	0	0	0	0	0	0	0	0
(9)	Distillate	Total	GWH	1	0	0	0	0	0	0	0	0	0	0	0
(10)		Steam	GWH	0	0	0	0	0	0	0	0	0	0	0	0
(11)		CC	GWH	1	0	0	0	0	0	0	0	0	0	0	0
(12)		CT	GWH	0	0	0	0	0	0	0	0	0	0	0	0
(13)		Other	GWH	0	0	0	0	0	0	0	0	0	0	0	0
(14)	Natural Gas	Total	GWH	3,251	3,040	2,228	1,544	1,781	1,496	1,347	1,036	1,142	1,202	1,286	839
(15)		Steam	GWH	119	143	0	0	0	0	0	0	0	0	0	0
(16)		CC	GWH	3,119	2,890	2,223	1,537	1,775	1,490	1,339	1,027	1,133	1,193	1,277	828
(17)		CT	GWH	13	8	6	7	6	6	8	9	9	9	8	11
(18)	NUG		GWH	0	0	0	0	0	0	0	0	0	0	0	0
(19)	Renewables	Total	GWH	83	91	100	140	178	187	194	194	194	194	194	194
(20)		Biofuels	GWH	0	0	0	0	0	0	0	0	0	0	0	0
(21)		Biomass	GWH	0	0	0	0	0	0	0	0	0	0	0	0
(22)		Hydro	GWH	0	0	0	0	0	0	0	0	0	0	0	0
(23)		Landfill Gas	GWH	73	81	90	130	169	177	184	184	184	184	184	184
(24)		MSW	GWH	0	0	0	0	0	0	0	0	0	0	0	0
(25)		Solar	GWH	10	10	10	10	10	10	9	9	9	9	9	9
(26)		Wind	GWH	0	0	0	0	0	0	0	0	0	0	0	0
(27)		Other	GWH	0	0	0	0	0	0	0	0	0	0	0	0
(28)	Other (Specify)		GWH	530	336	0	0	0	0	0	0	0	0	0	0
(29)	Net Energy for Load		GWH	7,026	7,065	7,569	7,585	7,721	7,844	7,473	7,060	7,172	7,285	7,401	6,779

Notes:
Represents fuel required to serve OUC and St. Cloud, and sales to City of VeroBeach (2014), City of Bartow (2014 through 2017), FPL (2015 through 2017), Lake Worth (2014 through 2018), and Winter Park (2014 through 2019).
Total Net Energy for Load may not correspond to other Schedules due to rounding.
Natural gas CC includes SEC A purchases from Southern - Florida, LLC
"Other" includes economy energy purchases.

Schedule 6.2
Energy Sources

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
	Energy Sources		Units	Actual 2012	Actual 2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
(1)	Firm Inter-Region Interchange		%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
(2)	Nuclear		%	5.94%	8.05%	6.10%	6.14%	5.99%	5.90%	6.19%	6.54%	6.44%	6.34%	6.24%	6.82%
(3)	Coal		%	39.07%	42.88%	63.14%	71.66%	68.63%	72.65%	73.19%	76.04%	74.94%	74.49%	73.77%	77.95%
(4)	Residual	Total	%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
(5)		Steam	%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
(6)		CC	%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
(7)		CT	%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
(8)		Other	%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
(9)	Distillate	Total	%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
(10)		Steam	%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
(11)		CC	%	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
(12)		CT	%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
(13)		Other	%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
(14)	Natural Gas	Total	%	46.27%	43.03%	29.44%	20.35%	23.07%	19.07%	18.03%	14.67%	15.92%	16.50%	17.37%	12.38%
(15)		Steam	%	1.69%	2.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
(16)		CC	%	44.40%	40.90%	29.36%	20.26%	22.99%	18.99%	17.92%	14.55%	15.79%	16.38%	17.26%	12.21%
(17)		CT	%	0.18%	0.11%	0.07%	0.09%	0.08%	0.08%	0.11%	0.13%	0.12%	0.12%	0.11%	0.17%
(18)	NUG		%												
(19)	Renewables	Total	%	1.18%	1.29%	1.32%	1.84%	2.31%	2.38%	2.60%	2.75%	2.70%	2.66%	2.62%	2.86%
(20)		Biofuels	%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
(21)		Biomass	%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
(22)		Hydro	%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
(23)		Landfill Gas	%	1.04%	1.15%	1.20%	1.71%	2.19%	2.26%	2.47%	2.61%	2.57%	2.53%	2.49%	2.72%
(24)		MSW	%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
(25)		Solar	%	0.14%	0.14%	0.13%	0.13%	0.12%	0.12%	0.13%	0.13%	0.13%	0.13%	0.13%	0.14%
(26)		Wind	%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
(27)		Other	%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
(28)	Other (Specify)		%	7.59%	4.78%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
(29)	Net Energy for Load		%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Notes:
Represents fuel required to serve OUC and St. Cloud, and sales to City of Vero Beach (2014), City of Bartow (2014 through 2017), FPL (2015 through 2017), Lake Worth (2014 through 2018), and Winter Park (2014 through 2019).
"Other" includes economy energy purchases.

Schedule 7.1
Forecast of Capacity, Demand, and Scheduled Maintenance at Time of Summer Peak

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Year	Total Installed Capacity MW	Firm Capacity Import MW	Firm Capacity Export MW	QF MW	Total Capacity Available MW	System Firm Summer Peak Demand MW	Reserve Margin before Maintenance MW	Reserve Margin before Maintenance % of Peak	Scheduled Maintenance MW	Reserve Margin after Maintenance MW	Reserve Margin after Maintenance % of Peak
FORECAST:											
2014	1,513	338	0	0	1,852	1,514	337	22%	0	337	22%
2015	1,551	338	0	0	1,890	1,483	406	27%	0	406	27%
2016	1,551	338	0	0	1,890	1,513	377	25%	0	377	25%
2017	1,551	338	0	0	1,890	1,540	350	23%	0	350	23%
2018	1,551	338	0	0	1,890	1,462	428	29%	0	428	29%
2019	1,551	338	0	0	1,890	1,393	496	36%	0	496	36%
2020	1,551	338	0	0	1,890	1,394	495	36%	0	495	36%
2021	1,551	338	0	0	1,890	1,420	470	33%	0	470	33%
2022	1,551	338	0	0	1,890	1,444	446	31%	0	446	31%
2023	1,551	338	0	0	1,890	1,468	421	29%	0	421	29%

Notes:
"Firm Capacity Import" includes OUC's existing and future power purchase agreements, including renewables.
"System Firm Summer Peak Demand" includes OUC and St. Cloud peak demand, as well as OUC's power sales to Vero Beach, Bartow, Lake Worth, Winter Park, and Florida Power & Light.
"Reserve Margin (MW)" calculated as available capacity minus "System Firm Summer Peak Demand." Adjustments made to reflect not carrying reserves on sales to Bartow, Lake Worth, or Florida Power & Light.
"Reserve Margin (% of Peak)" calculated as "Reserve Margin (MW)" divided by "System Firm Summer Peak Demand."
"Scheduled Maintenance (MW)" is zero, as no units are scheduled for maintenance during peak periods.

Schedule 7.2
Forecast of Capacity, Demand, and Scheduled Maintenance at Time of Winter Peak

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Year	Total Installed Capacity MW	Firm Capacity Import MW	Firm Capacity Export MW	QF MW	Total Capacity Available MW	System Firm Winter Peak Demand MW	Reserve Margin before Maintenance MW	Reserve Margin before Maintenance % of Peak	Scheduled Maintenance MW	Reserve Margin after Maintenance MW	Reserve Margin after Maintenance % of Peak
FORECAST:											
2013/14	1,582	357	0	0	1,940	1,340	600	45%	0	600	45%
2014/15	1,620	357	0	0	1,978	1,371	607	44%	0	607	44%
2015/16	1,620	357	0	0	1,978	1,408	569	40%	0	569	40%
2016/17	1,620	357	0	0	1,978	1,430	548	38%	0	548	38%
2017/18	1,620	357	0	0	1,978	1,420	558	39%	0	558	39%
2018/19	1,620	357	0	0	1,978	1,299	679	52%	0	679	52%
2019/20	1,620	357	0	0	1,978	1,304	674	52%	0	674	52%
2020/21	1,620	357	0	0	1,978	1,323	655	49%	0	655	49%
2021/22	1,620	357	0	0	1,978	1,348	629	47%	0	629	47%
2022/23	1,620	357	0	0	1,978	1,371	606	44%	0	606	44%

Notes:
"Firm Capacity Import" includes OUC's existing and future power purchase agreements, including renewables.
"System Firm Summer Peak Demand" includes OUC and St. Cloud peak demand, as well as OUC's power sales to Vero Beach, Bartow, Lake Worth, and Florida Power & Light.
"Reserve Margin (MW)" calculated as available capacity minus "System Firm Summer Peak Demand." Adjustments made to reflect not carrying reserves on sales to Bartow, Lake Worth, or Florida Power & Light.
"Reserve Margin (% of Peak)" calculated as "Reserve Margin (MW)" divided by "System Firm Summer Peak Demand."
"Scheduled Maintenance (MW)" is zero, as no units are scheduled for maintenance during peak periods.

Schedule 8
Planned and Prospective Generating Facility Additions and Changes

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Plant Name	Unit No.	Location	Unit Type	Fuel Pri	Fuel Alt	Fuel Transport Pri	Fuel Transport Alt	Const. Start Mo/Yr	Commercial In-Service Mo/Yr	Expected Retirement Mo/Yr	Gen. Max. Nameplate KW	Net Capability Summer MW	Net Capability Winter MW	Status

Notes:

No capacity additions required to maintain 15% reserve margin for base case load forecast.

Schedule 9
Status Report and Specifications of Proposed Generating Facilities

(1) Plant Name and Unit Number:

(2) Capacity
a. Summer:
b. Winter:

(3) Technology Type:

(4) Anticipated Construction Timing
a. Field construction start-date:
b. Commercial in-service date:

(5) Fuel
a. Primary fuel:
b. Alternate fuel:

(6) Air Pollution Control Strategy:

(7) Cooling Method:

(8) Total Site Area:

(9) Construction Status:

(10) Certification Status:

(11) Status with Federal Agencies:

(12) Projected Unit Perfomance Data
Planned Outage Factor (POF):
Forced Outage Factor (FOF):
Equivalent Availability Factor (EAF):
Resulting Capacity Factor (%):
Average Net Operating Heat Rate (ANOHR):

(13) Projected Unit Financial Data
Book Life (Years):
Total Installed Cost (In-Service Year $/kW):
Direct Construction Cost ($/kW):
AFUDC Amount ($/kW):
Escalation ($/kW):
Fixed O&M ($/kW-Yr):
Variable O&M ($/MWH):
K Factor:

Notes:

No capacity additions required to maintain 15% reserve margin for base case load forecast.

Schedule 10
Status Report and Specifications of Proposed Directly Associated Transmission Lines

(1)	Point of Origin and Termination:	OUC's 2014 Ten-Year Site Plan does not include any directly proposed transmission lines. Therefore, Schedule 10 is not applicable.
(2)	Number of Lines:	
(3)	Right-of-Way:	
(4)	Line Length:	
(5)	Voltage:	
(6)	Anticipated Construction Timing:	
(7)	Anticipated Capital Investment:	
(8)	Substations:	
(9)	Participation with Other Utilities:	